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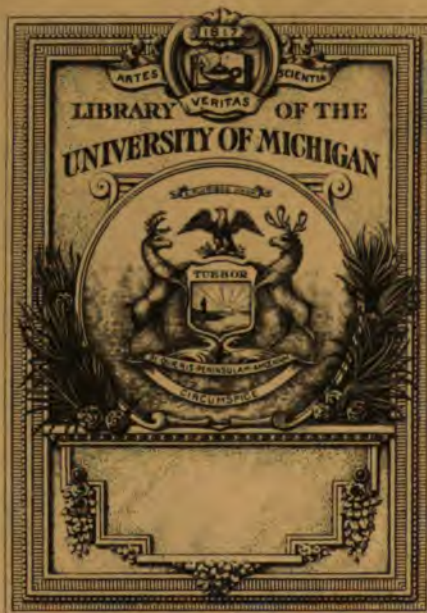
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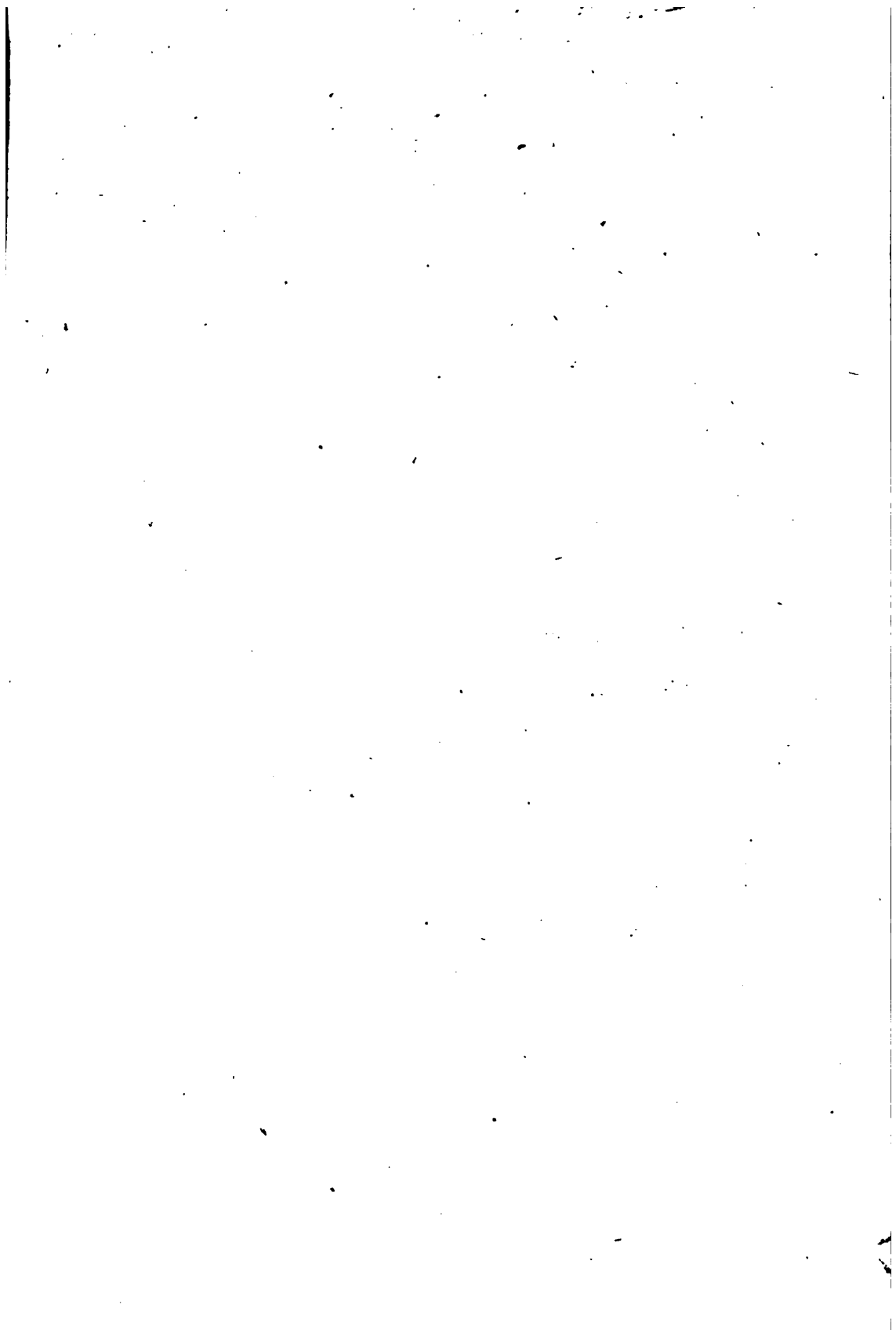
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1904







THE STANDARD FORMULARY

A COLLECTION OF
NEARLY FIVE THOUSAND FORMULAS

FOR

PHARMACEUTICAL PREPARATIONS, FAMILY REMEDIES, TOILET
ARTICLES, VETERINARY REMEDIES, SODA FOUNTAIN
REQUISITES, AND MISCELLANEOUS PREP-
ARATIONS ESPECIALLY ADAPTED
TO THE REQUIREMENTS
OF RETAIL DRUG-
GISTS

SIXTEENTH EDITION, REVISED.

BY
ALBERT E. EBERT, PH. M., PH. D.
AND
A. EMIL HISS, PH. G.

CHICAGO.
G. P. ENGELHARD & CO.
1904.

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Chemistry
J. E. S. H. H. H.
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INTRODUCTORY.

No book is of such profit-making value in a drug store as a good formulary—a truly practical work which tells not only what to make, but how to make it. Such a book must be more than a mere compilation of formulas drawn from miscellaneous sources, many of them untried and untrustworthy. A score of carefully selected and thoroughly tested formulas are worth a thousand of the kind embodied in most formularies, which usually consist in great part of mere clippings from current journals or of random and untested selections from prior publications. Pharmacists who possess formulas of merit cling to them with the greatest tenacity; this being one feature which has assisted in fostering the creation of monopoly preparations—the bane of pharmacy of to-day.

This formulary contains a vast collection of formulas, covering everything the pharmacist may desire to make, and every one, it is believed, thoroughly trustworthy. A large proportion have been collected in years past, as the outgrowth of practical experience, and are now offered to American pharmacists for the first time. Dieterich's and Hager's celebrated manuals—the great German authorities—are, by discriminating translations and adaptations, for the first time made accessible to the pharmacists of this country. The British, German, French, Swedish, Norwegian, Belgian, Austrian, and Italian pharmacopœias, Parrish's Pharmacy, the Eclectic Dispensatory, and the National Formulary have contributed their best and most useful formulas, while completeness has been assured by selections of the best from other authorities. While the policy has been not to burden the book with references to the sources of all formulas, due credit has been given in each case as opportunity permitted or equity required.

Attention is called here to the various divisions of the work. Part I embraces what are commonly known as pharmaceutical preparations, containing selections from the various pharmacopœias, the Eclectic Dispensatory, the National Formulary, and other authoritative works. Part III is designed to give the ingredients and quantities of preparations similar to the leading proprietary medicines of the market in order that druggists may know what they are called upon to dispense or sell. The introductory note to the chapter more fully explains its purpose. Part VII embraces such formulas as could not properly be included in the remaining division.

It is believed that the quantities of all formulas have been adapted to the usual needs of pharmacists. Preparations which are usually required in amounts of one pint or one pound bear formulas indicating this amount. If they are commonly prepared in smaller or in larger amounts, the quantities have been duly decreased or increased. Quantities of a formula are usually even amounts, such as 4 ounces, 8 ounces, 16 ounces, one-half gallon, etc. Due consideration has been given the fact that foreign preparations frequently differ in strength and specific gravity from similar preparations as made in this country;

INTRODUCTORY.

for example, solution of iron chloride of the German pharmacopœia represents 10 per cent. of metallic iron, and has a specific gravity of 1.28, whereas the similar preparation of the United States pharmacopœia represents 18 per cent. of metallic iron, and has a specific gravity of 1.887. This fact has necessitated almost constant recalculation of formulas taken from foreign sources, and sometimes even the entire recasting of formulas, in order that the product made by the use of American preparations shall be the same as that designed by the original formula.

It is the design of this Formulary that all liquids be measured and all solids be weighed. Hence, foreign formulas usually required the conversion of parts of liquids into volume, and this again necessitated consideration of specific gravities.

Owing to the greater familiarity of American pharmacists with the old system of grains, ounces, etc., quantities are all expressed in these in preference to the metric system. Troy ounces and pounds being now practically obsolete, these weights are replaced by equivalent quantities in the avoirdupois system. Liquid quantities are expressed in the apothecaries' system. Frequently it was considered advisable to alter working directions for making foreign preparations; for example, by the substitution of percolation for maceration.

It is especially advised that pharmacists carefully peruse the introductions to the various chapters or divisions. Failure to produce satisfactory results may be caused by neglect of this precaution. The introductions in Part V are especially complete.

Taken all in all, this volume can not fail, it is believed, to be of incalculable service to every pharmacist who sees in a properly utilized laboratory a means of asserting his personal independence of other's preparations and for extending his business and professional reputation while adding in an important measure to his profits.

THE EDITORS.

NOTE TO LATER EDITIONS.

The editors desire to express their sincere appreciation of the very flattering reception accorded this work by pharmacists and others in all parts of the country. It is believed that with the additions and other changes embodied in the successive revised Editions, the book will be found in even closer harmony with the demands, not only of scientific pharmacy, but of the retail drug trade in its relations to the ever vital problem of profit and loss.

The Index to the volume has been adjudged by several critics not sufficiently extensive to facilitate ready reference. This possible objection has, it is believed, been answered in the rigid alphabetical arrangement adopted for the chief classes of preparations, including the Elixirs, Extracts, Fluid Extracts, Liniments, Ointments, Powders, Solutions, Syrups, Tinctures, Wines, etc. With this fact in mind, reference to any desired preparation will be attended with little difficulty.

The work is undergoing constant revision, in order that the successive editions may be kept fully up to date in every department. Suggestions or contributions to this end will be highly appreciated.

THE EDITORS.

CHICAGO, January 2, 1908.

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Dieterich's Manual.....D.	French Pharmacopœia.....Codex.
Hager's Manual.....H.	Norwegian Pharmacopœia...Norw. Pharm.
American Dispensatory.....Eclectic.	Swedish Pharmacopœia.....Swed. Pharm.
German Pharmacopœia.....Germ. Pharm.	Austrian Pharmacopœia.....Austr. Pharm.
German Formulary.....Germ. Form.	Belgian Pharmacopœia.....Belg. Pharm.
British Pharmacopœia.....Brit. Pharm.	Italian Pharmacopœia.....Ital. Pharm.
British Formulary.....Brit. Form.	United States Pharmacopœia.....U. S. P.
National Formulary.....N. F.	

PART I.

PHARMACEUTICAL PREPARATIONS.

Abstracts.

These preparations were first introduced into the United States Pharmacopœia of 1880, and were dropped from the edition of 1890. They are used to some extent; the following is a general process for their manufacture:

Drug, No. 60 powder.....av.oz. 8
Menstruum,
Powdered sugar of milk of each, sufficient

Moisten the drug with menstruum, and pack, macerate, and extract in the usual way for making fluid extracts, reserving the first $6\frac{1}{4}$ fluidounces of percolate obtained and continuing percolation until the drug is exhausted. Evaporate the second percolate, at a temperature not exceeding 50 degrees C., to $1\frac{1}{4}$ fluidounces; mix this with the reserved percolate, place the whole in a broad evaporating dish or other suitable vessel; add 4 av. ounces of milk sugar, mix well, cover the vessel with a piece of thin muslin gauze to exclude dust, and set the whole aside in a warm place, where the temperature will not rise above 50 degrees C., until the mixture is dry. Then add enough milk sugar to make the whole weigh 4 av. ounces, reduce the whole to a uniform fine powder, and keep in a well-stopped bottle.

Essentially, therefore, the process of manufacture consists in making a fluid extract, evaporating this to a dry solid extract, and adding enough milk sugar to make up a quantity of one-half of the weight of the original drug.

Eleven abstracts were official, viz., aconite, belladonna (root), conium (fruit), digitalis, henbane (leaves), ignatia, jalap, nux vomica, podophyllum, senega and valerian. The menstruum usually employed in extracting the drugs was alcohol, the exceptions being nux vomica and ignatia, in which the menstruum was a mixture of alcohol and water in the proportion of eight of the former to one of the latter, and conium, in which the first four fluidounces of alcohol used as men-

struum is mixed with three fluidrams of diluted hydrochloric acid.

Acid, Carbolic, Camphorated. (Phenol Camphor.—Carbolized Camphor.)

Camphor, coarse powder....av.oz. 10
Carbolic acid, crystal.....av.oz. $3\frac{1}{2}$
Alcohol.....fl.oz. $\frac{1}{2}$

Triturate together until an oily liquid is obtained, or mix in a bottle and agitate frequently until solution occurs.

Acid, Carbolic, No. 33.

This is a dilution of carbolic acid recommended as more convenient and safe to use than liquefied carbolic acid, i.e., crystal carbolic acid melted and maintained in a liquid state by the addition of 5 per cent of water. It is prepared as follows:

Carbolic acid, crystal.av.oz. 2 or fl.oz. 2
Glycerin.....av.oz. 5 or fl.oz. 4

Melt the acid and add the glycerin.

This No. 33 acid mixes readily with water in all proportions, and, not being as caustic as the ordinary liquefied acid, cannot result in as much mischief or fatality if used improperly, or if taken accidentally or purposely.

Acid, Hydrocyanic, Scheele's.

This is to be prepared from potassium ferrocyanide and sulphuric acid according to the process of the U. S. Pharmacopœia. It should contain 4 per cent. of absolute hydrocyanic acid.—Brit. Form.

Acid, Sulphocarbolic, Crude.

Carbolic acid, crude.....fl.oz. 5
Sulphuric acid, commercial....fl.oz. $1\frac{1}{2}$
Water.....fl.oz. 9

Pour the carbolic acid into an earthenware jar surrounded by cold water; add the sulphuric acid in a fine stream, stirring constantly; then dilute this mixture with the water, also added gradually. Any marked rise in temperature should be avoided. It may be necessary to keep the temperature down by the use of ice added to the cold water.

This forms an economical and effective dis-

infectant for cesspools, urinals, sewers, etc.

—D.

Alcohol, Deodorized.

Many methods for deodorizing alcohol have been recommended, but the following will be found satisfactory:

A convenient amount of alcohol is shaken with powdered potassium permanganate until it assumes a decided color. Then allow to stand for several hours until the permanganate has become decomposed, and brown manganese dioxide has deposited. A pinch of pulverized calcium carbonate should then be added, and the whole subjected to distillation, using a well-cooled receiver. Distil very slowly at first, testing the distillate frequently, until a mixture of the distillate and a strong (syrupy) solution of pure caustic soda or potassa, in the proportion of 10 of the former to 1 of the latter, gives no perceptible yellow coloration, on standing for 20 minutes or half an hour. The first portion of distillate that yields this coloration should be rejected; the last one-eighth of liquid should not be distilled, and should also be rejected. The remaining portion only is adapted for use.

This alcohol is adapted to all chemical purposes and for use in the manufacture of perfumes.

Alcoolats.

These are a class of French preparations produced by distillation of drugs with alcohol. Balsamam (or baume de) fioravanti is an example.

Alcoolatures.

A class of French preparations produced by the action of alcohol upon fresh plant parts. They correspond to the tinctures of fresh herbs of our pharmacopœia.

Alcooles.

A class of French preparations which consist of alcoholic solutions of volatile oils, and therefore correspond to the spirits of our pharmacopœia.

Arquebusade. (Brown Arquebusade.

Wund-Wasser.)

Acetic acid, diluted.....fl.oz. $8\frac{1}{4}$
Diluted alcohol.....fl.oz. $4\frac{1}{2}$
Sulphuric acid, diluted.....fl.oz. $1\frac{1}{4}$
Clarified honey.....fl.oz. 2

Mix and filter.—H. and D.

Arquebusade, White.

Oil of sage.....drops 7
Oil of wormwood.....drops 7
Oil of rue.....drops 7
Oil of peppermint.....drops 7
Oil of rosemary.....drops 7
Oil of marjoram.....drops 7
Oil of lavender flowers.....drops 7
Alcohol.....fl.oz. 19
Water.....fl.oz. 18

Dissolve the oils in the alcohol and then add the water.—H.

Balsam, Blackberry.

Fluid extract of blackberry root.....fl.oz. 2
Fluid extract of geranium.....fl.oz. 1
Tincture of ginger.....fl.oz. 1
Syrup of rhubarb, aromatic.....fl.oz. 4
Oil of cinnamon.....drops 5
Oil of nutmegs.....drops 5
Oil of cloves, oil of pimento,
each.....drops 10

Simple elixir, enough to make.....fl.oz. 16

Mix the oils with the tinctures; add the syrup and elixir, and filter.

Refer also to page 180.

Balsam, Friar's. (Traumatic Balsam.—

Turlington's Balsam.)

Benzoin.....av.oz. $1\frac{1}{4}$
Storax.....av.oz. $\frac{1}{2}$
Balsam of tolu.....av.oz. $\frac{1}{4}$
Balsam of Peru.....av.oz. $\frac{1}{4}$
Myrrh.....gr. 60
Aloes.....gr. 60
Angelica root.....gr. 80
Alcohol.....fl.oz. 16

Macerate for ten days, and filter. The compound tincture of benzoin may be substituted for the above.

Balsam Fioravanti. (Baume de Fioravanti.—Spiritus Balsamicus,)

Peru balsam.....drops 15
Rectified oil of turpentine.....drops 15
Oil of cassia.....drops 15
Oil of cloves.....drops 15
Oil of juniper berries.....drops 15
Oil of mace.....drops 15
Oil of thyme (white).....drops 15
Alcohol.....enough to make fl.oz. 16.

—H.

This is a simpler and more rational formula than that of the Codex, which requires distillation.

Balm of Gilead, Factitious. (Artificial Balsam of Mecca.)

The original is an oleoresin derived from a tree growing on the shores of the Red Sea.

Imitations are much more common and are prepared as stated below:

I.

Benzoin, coarsely powdered	av.oz. 2
Liquid storax	av.oz. 1½
Tolu balsam	av.oz. 1
Balsam of fir	av.oz. 12

Place in a glass flask or bottle, and subject to the heat of a water bath for several hours; agitate frequently until liquefied; allow to cool, and decant the clear portion, to which add sufficient of the oils of lemon, cassia, rosemary, and nutmeg and vanilla extract to give it a strong aromatic odor.

II.

Benzoin, coarsely powdered	av.oz. 1
Peru balsam	av.oz. 1
Vanilla, cut small	gr. 60
Nutmeg, broken	gr. 60
Balsam of fir	av.oz. 8

Digest the whole as above, decant, and to decanted liquid add same essential oils.

Balsam of Guaiac.

Guaiac resin	av.oz. 8
Peru balsam	fl.dr. 1½
Alcohol	fl.oz. 10

Macerate for 7 days and strain.

An old remedy for rheumatism, ague, etc.

Dose, ¼ to 1 teaspoonful.

Balsam of Honey. (Pectoral Balsam.)

Opium, powdered	gr. 15
Tolu balsam	gr. 15
Storax	gr. 45
Honey	av.oz. 4
Diluted alcohol	fl.oz. 16

Balsam de Maltha. (Balsam di Malta.)

Benzoin, powdered	av.oz. 1¼
Peru balsam	av.oz. 1
Aloes	gr. 120
Alcohol	fl.oz. 16

Macerate for 7 days and filter.

Balsam, Metz's.

Linseed oil, olive oil, each	av.oz. 6
Oil of laurel berries, expressed	av.oz. 1
Oil of turpentine	fl.oz. 2
Aloes, powdered	dr. 2
Verdigris, powdered	dr. 8
Sulphate of zinc, powdered	dr. 1½
Oil of juniper	fl.oz. ½
Oil of cloves	fl.dr. 1

Melt the oils by gentle heat, and apply the powders as a dressing to wounds and ulcers.

Balsam, Nutmeg. (Balsamum Nucistæ.

—Muskat Balsam.—Magen Balsam.—

Nutmeg Cerate.)

Yellow wax	av.oz. 1¼
Olive oil	av.oz. 8¼
Expressed oil of nutmeg	av.oz. 10½

Melt the wax and add the oils.—Germ. Pharm.

A cheaper preparation can be prepared according to the following formula :

Olive oil	fl.oz. 6
Yellow wax	av.oz. 2
Spermaceti	av.oz. ½
Expressed oil of nutmeg	av.oz. 8
Alkanet	gr. 8
Annatto	gr. 15
Alcohol	fl.dr. 2

Melt the wax and spermaceti, add the olive, divide it into two parts; in one portion, digest the alkanet for 5 minutes, add the nutmeg oil and strain; triturate the annatto with the alcohol, digest the mixture with the second portion of oily liquid for 5 minutes, strain, add this to the first colature, mix well, and pour into molds if desired. Of course, a cheaper preparation may be produced by using a cheaper oil than olive oil, such as cottonseed or benne oil.—D. modified.

Balsam, Riga, Factitious.

The genuine, which is derived from a tree grown in northern Europe and Asia, is scarcely ever seen in this country, and the following mixtures are used as imitations:

I.

Oleo-balsam mixture, N. F.	fl.oz. 14
Spirit of sage (1 of oil to 49 of alcohol)	fl.oz. 1½
Tincture of Spanish saffron	fl.dr. 8

—H.

II.

Oil of juniper wood	fl.oz. 2
Compound tincture of benzoin	fl.oz. 2
Alcohol	fl.oz. 12

Balsam of Soap.

White castile soap, powdered	av.oz. 2
Camphor	av.oz. 2
White oil of thyme	fl.dr. 2
Acetic ether	fl.oz. 16

Mix and digest in a closed vessel at a gentle heat until dissolved, and decant the clear portion.

Balsam of Sulphur. (Sulphurated Oil.)

Linseed oil.....fl.oz. 15
 Sublimed sulphur.....av.oz. 2½

Boil together in an iron vessel, stirring constantly, until a uniform liquid is obtained, being cautious in regulating the heat so that the liquid will not boil over.

Balsam of Turpentine.

Olive oil.....fl.oz. 6
 Oil of turpentine.....fl.oz. 2
 Yellow wax.....av.oz. 1
 Peru balsam.....fl.dr. 2
 Camphor.....gr. 120
 Essential oil of nutmeg.....fl.dr. 2

Melt the wax, add the olive oil, and then incorporate the other ingredients.

Balsam, Universal.

Liniment of camphor.....fl.oz. 2
 Infused oil of henbane.....fl.oz. 8
 Cottonseed oil.....fl.oz. 2
 Yellow wax.....av.oz. 2
 Solution of lead subacetate...fl.oz. 1½

Melt the wax, add the oils, allow to cool, and when fairly cool, thoroughly incorporate the lead solution with the mixture.

Under the above title, many kinds of preparations are offered, but the formula given is believed to be the most sensible and will furnish as good a product as any.—D.

Bandages, Plaster of Paris.

These are made by taking gauze of suitable kind and of the width desired, and rolling it up just as in making roller bandages, and while doing so, sprinkling over it freshly burned plaster of Paris sufficient to fill the pores. The bandage is then to be wrapped in waxed paper and put into a tin box, or it is put directly into the box, which latter should then be well closed.—D.

Benzin, Deodorized.

Mix together 8 fluidounces sulphuric acid and 56 fluidounces of water and when cold pour it into a two-gallon bottle; add 1 av. ounce potassium permanganate and agitate until dissolved; then add 1 gallon of benzin and thoroughly agitate, and allow the mixture to remain in contact for twenty-four hours, frequently agitating. Separate the benzin and wash in a similar bottle with a mixture of 120 grains of potassium permanganate, 240 grains of caustic soda, and

32 fluidounces of water, agitating frequently during several hours. Then separate the benzin and wash it thoroughly with water.

On agitating the benzin with the acid permanganate solution, an emulsion-like mixture is produced which separates in a few seconds, the permanganate solution slowly subsiding and showing considerable reduction.

The quantity of permanganate necessary is in direct proportion to the impurities existing in the benzin. The quantity ordered in the formula is sufficient for a very crude article and may be reduced when manipulating with a purer distillate.

Bitters, Thompsonian. ("Number Four")

Barberry bark,
 Balmony,
 Poplar bark.....of each, equal parts.

Other Bitters will be mentioned in Parts II and III.

Blood, Dried, Defibrinated. (Sanguis Bovinus Inspissatus or Exsiccatus.)

This may be prepared by evaporating fresh defibrinated bullock's blood on a water bath, stirring constantly, until it assumes a granular condition; then spread on glass plates and keep at a temperature of 35 to 40 degrees C. (in a drying oven) until perfectly dry, after which it is powdered and put into well-stopped bottles.—D.

The defibrinated blood may be prepared by vigorously beating fresh blood in a broad dish with a stick or twig until there is no further separation of fibrin.

Bougies. (Urethral Suppositories.)

These are prepared from three different kinds of materials, the first kind being prepared with cacao butter, and are known as "cacao butter" bougies; the second with gelatin and glycerin, and are known as "gelatin" bougies, and the last with mucilage, and are known as "gum bougies."

Bougies, Cacao Butter.

The mass for these is prepared by mixing the medicating substance with grated cacao butter, adding a little petrolatum or bland fixed oil. To form the bougies from this, the mass is put into a bougie syringe made of metal, having an opening below like an ordinary syringe, and having a piston which

screws down instead of simply pushing down. When the mass is prepared, it is packed into the syringe after removing the piston; the latter is replaced and is slowly screwed downward. As the piston moves forward, the mass begins to make its exit at the opening below in the form of a slender cylinder. This cylinder may subsequently be cut into suitable lengths. In the absence of a syringe, the bougies may be fashioned by rolling them out on a board just as a pill mass is rolled into a "pipe."

Providing the medicating substance is not in powder form, and cannot conveniently or advantageously be reduced to this form, the method of mixing is not so simple as outlined above. If something like an extract is to be incorporated, this must first be softened with water, glycerin, diluted alcohol, or alcohol, after which it may be mixed with the cacao butter as before; or it may be that some fixed oil or other substance will be a more suitable softening agent. Possibly the substance is soluble in the cacao butter in a melted condition; it should, of course, be so dissolved, and after cooling and hardening, the mass should be reduced to powder by grating or otherwise, mixed possibly with a little petrolatum or fixed oil, and be fashioned into bougies as before. Large quantities of liquids cannot, of course, be incorporated with bougie masses; in many instances, however, it will be possible to concentrate the liquid by evaporation without injury to its medicinal principles; then, subsequently, the concentrated residue may be mixed with the cacao butter as before.

These bougies have the disadvantage of being brittle, and hence are used but little.

Bougies, Gelatin.

The best kind of gelatin to use in this process is the purest white of the kind known as "French." The mass employed is made from gelatin, glycerin and water, but the proportion cannot be the same in all cases, as the nature of the medicating substance to be combined may require a modification; also the gelatin may vary to some extent, and modification of the proportions may be required on this account.

Where gelatin bougies are regularly or-

dered, it is best to keep a supply of several suitable gelatin masses. These should preferably be kept in glass vessels, and be covered with a thin layer of alcohol to prevent moulding, the whole, of course, being well covered. When wanted for use, the alcohol should be poured from the surface of the mass and the adhering alcohol removed by wiping with a tuft of absorbent cotton, after which the mass may be removed either by cutting out a piece with a knife or by melting in a water bath and pouring out the liquefied mixture.

To prepare the mass the following plan should be adopted:

Soak the requisite quantity of gelatin in a portion of the distilled water contained in a porcelain vessel for several hours, or until it is thoroughly softened; add enough water to make 3, 4 or 5 times the weight of original gelatin; add the prescribed quantity of glycerin; heat on a water bath with frequent stirring until dissolved, and then continue heating to remove excess of water.

Medicaments added to gelatin bougie masses may be (1) without any influence upon the latter, or they may (2) cause it to become tenacious, or they may (3) render it thin or unctuous. Examples of the different kinds are appended, also of the different mixtures of glycerin, gelatin and water for use in various cases.

Hard Glycerin-Gelatin Mass.

Gelatin.....	av.oz. 3
Water.....	fl.oz. 9
Glycerin.....	fl.oz. 5

This mass is to be prepared as directed, and is then to be evaporated until it weighs 12 av.ounces.

Soft Glycerin—Gelatin Mass.

Gelatin.....	av.oz. 1½
Water.....	fl.oz. 4½
Glycerin.....	fl.oz. 4

Evaporate this also until it weighs 10 av.ounces.

In preparing the bougies, the medicating substance must be added either in the form of fine powder, or in the form of a concentrated solution. If it be an extract or similar substance, it is to be softened with water, glycerin, etc., just as in the case of the cacao butter bougies. As in making the latter, no

large volume of liquid can be incorporated into the mass. A larger volume, however, can be incorporated with the gelatin mass than with the cacao butter mass. If necessary, after adding liquid, the consistence of the mass may be restored by a little powdered tragacanth.

Having melted the gelatin mass by aid of a water bath and added the medicaments, the whole may be poured into molds. Before doing so, it may frequently be of advantage to heat the mixture for a few moments carefully over a naked flame so as to render it still more fluid. During heating, the mixture is stirred carefully to liberate all air bubbles. This prepared mixture is now poured quickly into molds.

The molds used are of the hinged kind, so that they may be opened and the bougies taken out; they are constructed of brass, block tin, or nickel-plated iron. Before using, the interior of the molds must be rubbed with petrolatum or oil to prevent adhesion of the mass; then they must be made quite warm or, in the case of rather hard masses, even quite hot. This warming is necessary to permit escape of air bubbles. The hot mass may then be poured into the molds. The only time an exception is made to pouring the mass in a hot condition into the molds, is when the medicament is an entirely insoluble solid; then the latter must be triturated to an exceedingly fine powder and added to the mass. Before pouring the latter into molds it should be allowed to cool sufficiently, so that when dropped upon a cold stone it will congeal almost immediately. This mass should be poured into the cold molds.

After pouring the mixture into molds, the latter are placed upon ice. After cooling, the mold should be opened and the bougies taken out and exposed to the air for several hours, that they may harden on the surface, after which they should be wrapped in waxed paper and laid horizontally in boxes. The bougies may also be kept in a box rolled in lycopodium.

In the absence of a mold, gelatin bougies may be formed by means of a glass tube of suitable size. Oil this tube by sucking into

it a small quantity of olive oil or liquid petrolatum and allowing this to run out again. Now place the tube into the gelatin mass, suck up the latter to the desired height, cover the upper end quickly with the finger, and place the lower end on ice until the lower portion of the mass has solidified; now remove the finger and lay the tube down on the ice in an inclined position. When the bougie has hardened it may be removed by pushing it out with a smaller glass tube or a rod of some kind.

Examples of the three kinds of mixture in which the consistency of the bougie mass is either unaltered or altered:

1.—The consistency is unaltered:

Bougies, Silver Nitrate.

Silver nitrate.....gr. 7
Distilled water.....sufficient.
Hard glycerin-gelatin mass....av.oz. 8

Dissolve the silver nitrate in a few drops of water, add this solution to the melted gelatin mass, and form into bougies in the prescribed manner.

These bougies contain one-half per cent of the silver salt. They soon become discolored and must be made fresh.—D.

Bougies, Chloral Hydrate.

Chloral hydrate.....gr. 23
Hard glycerin-gelatin mass....av.oz. 1

Pulverize the chloral hydrate, add to the melted gelatin mass, stir until dissolved, and pour into bougies. The product contains 5 per cent of chloral hydrate.—D.

Bougies, Iodoform.

These are to be prepared like the chloral hydrate bougies.—D.

Bougies, Potassium Iodide.

Prepare these like the chloral hydrate bougies.—D.

2. The mass becomes tenacious:

Bougies, Alum.

Alum, powdered.....av.oz. $\frac{1}{2}$
Glycerite of tragacanth.....av.oz. $2\frac{1}{2}$
Soft glycerin-gelatin mass....av.oz. 7

Triturate the alum with the glycerite to a smooth paste, add to the melted gelatin mass, heat the whole for a moment over a naked flame, pour into the hot molds, allow to

stand for a moment, and then cool rapidly by placing upon ice.

The product contains 5 per cent. of alum.
—D.

Bougies, Ferric Chloride.

Solution of ferric chloride.....fl.dr. 5½
Glycerite of tragacanth.....av.oz. 1¼
Soft glycerin-gelatin mass.....av.oz. 3½

Melt the glycerite and gelatin mass, add the iron solution, and then proceed as with the alum bougies.—D.

The product contains 10 per cent. of the iron solution.

3. The mass becomes thin or unctuous:

Bougies, Tannin.

Tannin.....gr. 100
Alcohol.....fl.oz. 1
Tragacanth, powdered.....gr. 30
Hard glycerin-gelatin mass.....av.oz. 4

Dissolve the tannin in the alcohol, triturate this with the tragacanth, incorporate with the melted gelatin mass, expose to the heat of a water bath until the alcohol has evaporated, pour into molds, and cool as rapidly as possible. The product contains 5 per cent of tannin.—D.

Bougies, Gum.

These may be prepared from mixtures of powdered tragacanth, starch, dextrin, sugar and medicament, rubbed to a paste with water and glycerin, or they may be prepared by massing the medicating ingredient with mucilage of acacia, glycerin and water, and rolling into the proper form. If the bougies contain too large a proportion of medicating ingredient, the latter may be diluted with some inert or harmless body; powdered boric acid will serve acceptably.

Camphor Cream.

White castile soap.....gr. 120
Boiling water.....sufficient.
Ammonium carbonate.....gr. 120
Camphor, powdered.....gr. 120
Tincture of opium.....fl.dr. 2
Oil of organum.....fl.dr. 1
Water, enough to make.....fl.oz. 16

Dissolve the soap in the boiling water, allow the solution to cool, add the remaining ingredients, and mix well.

Sometimes this is made with double the amount of soap and is also made to contain 1 fluidounce of oil of turpentine to the pint.

A formula for a toilet preparation by the
2

name of "cream of camphor," may also be found in Part III.

Camphor, Chloral. (Camphorated Chloral.)

Chloral.....av.oz. 4
Camphor.....av.oz. 4

Mix by agitation in a bottle or trituration in a warm mortar until liquefied and combined.—N. F.

Camphor Julep, Thompsonian.

Camphor.....gr. 60
Myrrh.....gr. 210
Sugar.....gr. 120
Water.....fl.oz. 4

Camphor Salicylate.

Camphor.....av.oz. 9
Salicylic acid.....av.oz. 7

Reduce the camphor to powder in the usual way and mix well with the acid.

Catgut.

This is prepared from the intestines of different animals, but usually the sheep. To prepare the gut, the intestines are cleaned, freed from fat, and steeped for some time in water, after which the external membrane is scraped off with a blunt tool like the back of a knife. The membrane is then cut into strips, bleached possibly and washed in water, dried, twisted or rolled, and then smoothed, the two last-named operations being done by machinery only.

In the absence of catgut ligatures, one may prepare suitable sizes of violin or banjo strings for surgical purposes.

The catgut after being prepared as above, must be freed from contained fat, a convenient method being by maceration in ether or chloroform. The gut may be preserved in alcohol, oil of juniper or other suitable liquid, using a well-closed, wide-mouth bottle as receptacle.

In medicating catgut, which is in skeins, the cord binding the gut should be cut so as to impregnate uniformly.

After impregnation, it is generally directed to wind the gut upon glass spools.

Catgut, Carbulated.

I. Lister's process:

Carbolic acid, crystal.....gr. 540
Distilled water.....fl.dr. 1
Olive oil.....fl.oz. 7½

Mix in a wide-mouth glass bottle or other suitable vessel. Place in the mixture as much catgut as is to be impregnated, adding more liquid if necessary, to completely immerse the gut.

Allow the gut to remain in the turbid fluid until the latter becomes clear, agitating from time to time. When the liquid becomes transparent, the gut will have become soft and have absorbed water and acid. It is now wound upon glass spools, the whole then being immersed in a mixture of carbolic acid and olive oil in the proportion of 1 of the former to 4 of the latter.—D.

II. Block's process:

Roll the cleansed catgut upon glass spools, macerate in a 5-per-cent aqueous solution of carbolic acid for 48 hours, then unwind in a dish containing a freshly prepared 5-per-cent aqueous carbolic acid solution, and now re-wind (tightly) the gut upon the spool. Preserve in a 5-per-cent solution of carbolic acid in alcohol.—D.

III. Block's carbolic alcohol process:

Prepare like the preceding, using an alcoholic solution of carbolic acid instead of an aqueous one as above.—D.

Catgut, Chromated.

Chromic acid.....	gr. 2
Carbolic acid, crystal.....	gr. 400
Distilled water.....	fl.oz. 17½

Dissolve and add an amount of catgut equal in weight to the carbolic acid used; allow to remain in the solution for 48 hours, then remove, dry, wind upon glass spools, and place in carbolized oil.

This is Lister's process for hardening gut so that it will not be readily absorbed.

Catgut, Juniper, Kocher.

Macerate catgut for 24 hours in oil of juniper berries, then preserve either in this oil or in the following solution:

Mercuric chloride.....	gr. 5
Glycerin.....	fl.oz. 2
Alcohol.....	fl.oz. 27

—D

Catgut, Mercuric Chloride. (Sublimated Catgut.)

1. Bergman's process:

Catgut rolled on glass spools is to be placed in 5-per-cent alcoholic solution of

mercuric chloride, renewing the solution every 2 days, until it remains clear, then preserve the gut in this solution.

2. Schede and Kuemmel's process:

Catgut rolled upon glass spools is to be placed for 12 hours in a 5-per-cent aqueous solution of mercuric chloride; then preserve in ½ per-cent alcoholic solution of the same salt to which has previously been added 10 per cent of glycerin.—D.

Caustic, Arsenical, Ratiér's.

Arsenious acid.....	gr. 20
Kino.....	gr. 160
Cinnabar.....	gr. 320

All should be in fine powder.

Caustic, Black, Velpeau's.

Triturate powdered licorice root in a mortar, adding sulphuric acid until a suitable mass is formed.

Caustic, Vienna. (Potassa cum Calce.)

Triturate equal parts by weight of caustic potassa and lime together in a warm iron mortar so as to form a powder, and keep in a well-stoppered bottle.—U. S. P.

Cerate, Brown. (Brown Ointment.—

Mother salve.—Unguentum fuscum.—Emplastrum fuscum molle.)

I. Lead plaster.....	av.oz. 8
Yellow wax.....	av.oz. 3¼
Lard.....	av.oz. 4¾

Melt the lead plaster and stir constantly while liquid, until it assumes a dark brown tint; add the wax and lard: allow to cool somewhat, and pour into molds.—Austr. Pharm.

II. A more rational and easy method of preparation is the following:

Black mother plaster.....	av.oz. 8
Lard.....	av.oz. 6½
Yellow wax.....	av.oz. 1½

Melt the plaster and wax, add the lard, allow to cool somewhat, and pour into molds as before.—D.

Cerate of Calamine. (Turner's Cerate.

—Cerate of Zinc Carbonate.)

Zinc carbonate.....	av.oz. 1
Simple cerate.....	av.oz. 5

—Eclectic.

Under the name "Turner's cerate," the National Formulary gives a preparation of

the same strength as the above, but made with simple ointment.

Cerate, Calendula.

Lard, fresh.....av.oz. 8
Fluid extract of calendula.....fl.oz. 1

Heat on a water bath until the alcohol has evaporated, stirring frequently meanwhile.

Another method consists in digesting the flowers with melted lard for about 10 minutes, stirring occasionally; then strain, and stir frequently until cooled. It is advisable to add about 2 av.ounces of yellow wax.

Cerate of Copaiba.

Yellow wax, filtered.....av.oz. 2 3/4
Balsam of copaiba.....av.oz. 5 1/2

Melt the wax and, when it begins to cool, add the balsam; the two will mix more readily if the balsam be warmed to 80 or 40 degrees C. before adding to the wax.—D.

Cerate, Green. (Ceratum Aeruginis.)

Yellow wax.....av.oz. 8
Resin.....av.oz. 4 1/4
Gum turpentine.....av.oz. 1 1/2
Verdigris, powdered.....gr. 350
Benzoinated lard.....gr. 180
Olive oil.....fl.dr. 8

Melt the wax, resin, and turpentine together, add the verdigris, which has previously been triturated to a smooth paste with the lard and oil, mix well, and pour into molds.—D.

Cerate of Nutmeg.

Refer to "Balsams."

Cerate of Soap.

Soap plaster.....av.oz. 8 1/2
Yellow wax.....av.oz. 4 1/2
Olive oil.....fl.oz. 8

Melt the wax and plaster, add the oil, and stir until cool.—U. S. P. 1870.

Chlorodyne.

Under the name "J. Collis Browne's Chlorodyne," an English nostrum was at one time used largely, not only in England, but in this country as well. A number of substitutes have been and are still in use, the formulas for which differ from one another more or less, sometimes quite materially. The National Formulary recognizes one of these preparations under the name of "Mis-

tura Chloroformi et Cannabis Indicae Composita," or chloroform anodyne, made as follows:

I.

Chloroform.....fl.oz. 2
Ether.....fl.dr. 4
Tincture of cannabis indica.....fl.oz. 2
Tincture of capsicum.....fl.oz. 1
Morphine sulphate.....gr. 18
Oil of peppermint.....m. 15
Glycerin.....fl.oz. 2
Water.....fl.oz. 1
Alcohol, enough to make.....fl.oz. 16

Dissolve the oil in 8 fluidounces of alcohol, add the chloroform, ether and tinctures, mix well, add the morphine sulphate previously dissolved in the water and glycerin; finally add the remainder of the alcohol.

II.

Chloroform.....fl.dr. 2
Morphine.....gr. 10
Ether.....fl.dr. 1
Oil of peppermint.....drops 8
Diluted hydrocyanic acid.....fl.dr. 2
Tincture of capsicum.....fl.dr. 2
Molasses.....fl.oz. 2 1/2
Extract of licorice.....gr. 30

This is said to resemble Browne's very closely.

III. Chandler's formula:

Morphine hydrochlorate.....gr. 16
Oil of peppermint.....drops 20
Tincture of capsicum.....drops 30
Fluid extract of cannabis indica.....fl.dr. 1
Alcohol.....fl.oz. 2
Glycerin.....fl.oz. 2

IV. Modified Smith's formula:

Chloroform.....fl.dr. 4
Morphine hydrochlorate.....gr. 20
Oil of peppermint.....drops 8
Tincture of capsicum.....drops 50
Diluted hydrocyanic acid.....fl.dr. 2
Mucilage of acacia.....fl.oz. 1
Fluid extract of cannabis indica.....fl.dr. 2
Simple syrup, enough to make.....fl.oz. 4
Solution of caramel, sufficient to color properly.

V. Squires' formula:

Chloroform.....fl.oz. 1
Stronger ether.....fl.dr. 2
Alcohol.....fl.oz. 1
Molasses.....fl.oz. 1
Extract of licorice, powdered.....gr. 800
Morphine hydrochlorate.....gr. 2
Oil of peppermint.....drops 4
Simple syrup.....fl.oz. 4 1/2
Diluted hydrocyanic acid.....fl.dr. 4

Dissolve the morphine and oil of peppermint in the alcohol, mix the chloroform and ether with this solution, mix the licorice with the syrup, add the molasses, shake these two mixtures well together, and, lastly, add the hydrocyanic acid and again shake well.

VI. Gilman's formula:

Chloroform	.....fl.dr. 2
Glycerin	.....fl.oz. 2
Alcohol	.....fl.oz. 2
Spirit of peppermint	.....fl.dr. 2
Diluted hydrocyanic acid	.....fl.dr. 2
Tincture of capsicum	.....fl.dr. 2
Morphine hydrochlorate	.....gr. 8
Molasses	.....fl.oz. 3

VII. Fenner's formula No. 1:

Chloroform	.....fl.oz. 1
Fluid extract cannabis indica	.....fl.oz. 1
Compound spirit of ether	.....fl.oz. 1½
Deodorized tincture of opium	.....fl.oz. 1½
Diluted hydrocyanic acid	.....fl.dr. 3
Oleoresin of capsicum	.....drops 3

Dissolve the oils in the chloroform, add the compound spirit of ether, and mix.

VIII. Fenner's formula No. 2:

Morphine sulphate	.....gr. 15
Chloroform	.....fl.oz. 1
Fluid extract of cannabis indica	.....fl.oz. 1
Glycerin	.....fl.oz. 1
Alcohol	.....fl.oz. 1
Diluted hydrocyanic acid	.....drops 15
Spirit of peppermint	.....drops 15

Mix the liquids and dissolve the morphine in the mixture.

Chloroform of Aconite.—(Aconite Chloroform.)

Aconite root	.....av.oz. 11
Water of ammonia	.....fl.oz. 2
Distilled water	.....fl.oz. 10
Chloroform	.....sufficient.

Bruise the aconite, moisten thoroughly with the distilled water and ammonia previously mixed, macerate for 4 hours, dry carefully, reduce to No. 40 powder, pack tightly in a percolator (such as would be used for highly volatile liquids), macerate for 24 hours with 11 fluidounces of chloroform, and then percolate slowly, adding more chloroform until 16 fluidounces of product are obtained.—Brit. Form.

"Chloroforms" of other alkaloidal drugs, such as belladonna, hyoscyamus, etc., may be produced in the same manner.

Chloroform, Camphorated.

Chloroformfl.oz. 4
Camphor	.....av.oz. 8

Mix and dissolve.—Brit. Form.

Collodion, Aconite.

Aconite root, in fine powder	av.oz. 8½
Stronger ether	.....fl.oz. 12
Alcohol	.....sufficient.
Balsam of fir	.....gr. 240
Pyroxylin	.....gr. 60

Pack the powder very tightly in a percolator intended for volatile liquids, mix the ether with 4 fluidounces of alcohol, saturate the drug with this liquid, macerate for about 16 hours, then percolate slowly, adding enough alcohol through the percolator so as to make 16 fluidounces of percolate. In this dissolve the balsam and pyroxylin.

Collodion, Belladonna.

This may be prepared in the same way as the preceding, using belladonna leaves instead of aconite root.

Collodion, Cantharidin.

I.	
Cantharidin	.....gr. 3
Gum turpentine	.....av.oz. 1
Acetone	.....fl.dr. 3
Collodion, enough to make	.....fl.oz. 8

Triturate the cantharidin with the turpentine to as fine a powder as possible, then add the acetone and heat the mixture very cautiously until solution occurs; then add to the collodion. If a green color be desired, add a small amount of English extract of cannabis indica.—D. modified.

II. This contains ½ per cent of cantharidin.

Cantharidin	.....gr. 4½
Cottonseed or olive oil	.....fl.dr. 2½
Collodion, enough to make	.....fl.oz. 8

Triturate the cantharidin with the oil, add to the collodion, and agitate until dissolved. If desired of a green tint, color as before.—D. modified.

Collodion, Carbolated.

Carbolic acid, crystal	.....gr. 150
Collodion	.....fl.oz. 8
Oil of rose	.....drops 2

—D.

The product contains 5 per cent of acid.

Collodion, Chrysarobin.

Chrysarobin	.....gr. 320
Collodion	.....fl.oz. 8

The chrysarobin should be in very fine

powder and be dissolved in the collodion by agitation.—D.

The product contains 10 per cent of chrysarobin.

Collodion, Carbolated Salicylic, Unna.

Carbolic acid, crystal.....av.oz. 1
Salicylic acid.....av.oz. 1
Collodion.....fl.oz. 5
Mix and dissolve by agitation.—D.

The product contains one-third by weight of the combined acids.

Collodion, Diachylon. (Collodion with Lead Plaster.)

Lead plaster.....gr. 280
Alcohol.....fl.dr. 6
Stronger ether.....fl.dr. 14
Collodion, enough to make...fl.oz. 8

Melt the plaster by warming, add the alcohol and ether, stir quickly until dissolved, and add at once to the collodion.—D.

The product contains 5 per cent of lead plaster.

Collodion, Iodized.

Iodine, reduced to powder.....gr. 160
Flexible collodion.....fl.oz. 8

Introduce the iodine into a bottle, add the flexible collodion and agitate until the iodine is dissolved.—N. F.

Collodion, Iodoform.

Iodoform.....gr. 160
Flexible collodion.....fl.oz. 8

Mix and dissolve the iodoform in the flexible collodion by agitation.—N. F.

Collodion, Iodol.

Iodol.....gr. 300
Alcohol.....fl.oz. 1¼
Ether.....fl.oz. 5½
Pyroxylin.....gr. 120
Castor oil fl.dr. 3 (or gr. 160 if weighed.)

Dissolve the iodol in the mixture of alcohol and ether, add the pyroxylin in small portions, agitate until dissolved, and finally add the oil. The product contains 10 per cent. of iodol.

Collodion, Iron.

Solid chloride of iron.....gr. 300
Flexible collodion.....fl.oz. 7½
Oil of sage.....drops 10
Dissolve by agitation.—D.

The product contains 10 per cent of ferric chloride.

Collodion, Mercuric Chloride. (Corrosive Sublimate Collodion.—Sublimated Collodion.)

Corrosive sublimate, powdered...gr. 150
Flexible collodion.....fl.oz. 8

Dissolve the salt in the collodion by agitation. If the salt be on hand only in the crystalline form, it should be triturated dry to powder.—D.

The product contains 5 per cent of corrosive sublimate.

Collodion, Photographer's.

Pyroxylin.....gr. 275
Alcohol.....fl.oz. 2¼
Absolute alcohol.....fl.oz. 4½
Stronger ether.....fl.oz. 10 to 12

Add the pyroxylin to the alcohol, shake well, and add the absolute alcohol and ether.

—H.

This contains almost 5 per cent of gun cotton, and is therefore stronger than the official collodion.

Collodion, Salol.

Salol.....gr. 280
Stronger ether.....fl.oz. 1
Collodion.....fl.oz. 7

Dissolve the salol in the ether and add the collodion.—D.

The product contains 10 per cent of salol.

Collodion, Thymol.

Thymol.....gr. 150
Collodion.....fl.oz. 8
Dissolve by agitation.—D.

Collodion, Thiol, Jacobsen.

Thiol, powder.....gr. 75
Flexible collodion.....fl.oz. 8
D.

Concentrations.

This class of preparations was originally introduced by physicians of the Eclectic school of medicine and subsequently was employed by physicians of other schools. They are now employed in Europe; also one, at least, has found recognition in the United States Pharmacopœia, viz., podophyllin.

The general plan for their manufacture originally consisted in extracting the drug with strong alcohol, evaporating this tincture to small bulk, adding to cold water, stirring constantly meanwhile, allowing the precipi-

tate formed to subside, collecting the latter, and drying and powdering it.

If the drug contain an oleoresin, the precipitate cannot be dried sufficiently to powder, but remains a soft, sticky mass. In this case, the precipitate should be dried sufficiently to remove the water, then add enough of the original drug, in powdered form, to reduce to a rather tough mass, break the latter into small pieces, dry in warm air, and pulverize as before.

In many instances, there would be, by the use of water alone as a precipitating agent, an inappreciable amount of precipitate. In such cases, alum is added to the water and some ammonium carbonate to the alcoholic liquid. The precipitate contains aluminium hydrate, and the product will very often be green from precipitated chlorophyll.

Other substances are added to the water to facilitate precipitation, such as acids and alkalis, depending, of course, upon the character of the drug.

While the above methods of preparing concentrations were advised by Eclectic practitioners, other methods are in vogue among manufacturers. In many instances, the concentration is simply a powdered extract, the so-called "euonymin," for example, the drug often being exhausted with dilute alcohol or water. Instead of using the powdered drug as a drying agent, as is stated above, most manufacturers use milk sugar, magnesia or other absorbent powder.

Most of the concentrations are supposed to be resinous in character, and are termed "resinoids," while others are alkaloidal in character. The latter are believed to be prepared by exhausting the drug with a very dilute acid (from $\frac{1}{2}$ to 8 per cent), usually hydrochloric or sulphuric, evaporating the liquid obtained to moderate bulk, adding ammonia to neutralize the acid, collecting the precipitate, and washing and drying it. Hydrastis and sanguinaria are drugs treated in this manner.

As may be surmised from what has been stated, concentrations from different manufacturers differ from each other greatly in quality and strength and color, as well as in other properties,

The nomenclature of the concentrations is very confusing. The resinoids have names ending in "in"—cornin, helenin, etc.—while those of alkaloidal character are known by names ending either in "in" or "ia," and are coupled with names indicating the acid employed in extraction, e.g., hydrastia sulphate, sanguinarin nitrate, etc. Manufacturers of pharmaceuticals have not only modified the processes of preparation, but have introduced innovations in the titles. When it is borne in mind that glucosides have names terminating in "in," and that alkaloidal names end in "ine" ("ia" is also used), and that almost all drugs contain glucosides or alkaloids or even both, one can readily see that almost inextricable confusion must result, often to the serious detriment of sick persons. This is the case particularly with the derivatives of hydrastis and sanguinaria.

The following table is presented because of its convenience for reference. It will not apply to the products of all manufacturers, nor does it mention all concentrations, but it may prove useful nevertheless.

Class I. Concentrations consisting largely of resin and nearly or entirely soluble in alcohol:

Aletridin,* Asclepidin,* Cimicifugin (Macrotin), Eryngin,* Helonin,* Iridin* Lia-trin,* Podophyllin (U. S. P.), Ptelein.*

The pulverulent resinoids of aletris and iris versicolor are known as above, while the soft, oleoresinous articles are called aletrin and irisin.

Class II. Concentrations which generally contain inorganic constituents from the process of manufacture, and are frequently of a green character:

Barosmin, Euonymin (green variety), Lobelin, Lycopin, Podophyllin (yellow variety), Scutellarin, Senecin.

Class III. Concentrations which contain a number (probably most) of the soluble drug constituents:

Aletrin,* Alnuin, Ampelopsin, Apocynin, Asclepidin,* Baptisin, Betulin, Caulophyllin, Cerasin, Chelonin, Chimaphilin, Chionanthin, Collinsonin, Colocynthin, Cornin, Corydalin, Cypripedin, Dioscorin, Euonymin (brown

variety), Eupatorin, Euphorbin, Eupurpurin, Fraserin, Gelsemin, Geranin, Gossypin, Hamamelin, Humulin, Inulin, Irisin,* Jalapin, Juglandin, Leontodin, Leptandrin, Liatrin,* Liriodendrin, Menispermin, Myricin, Phytolaccin, Prunin, Rhusin, Rumicin, Smilacin, Stillingin, Taraxin, Trillin, Viburnin, Xanthoxylin.

Class IV. Concentrations which consist of alkaloids or alkaloidal salts in more or less impure form:

Hydrastin, Hydrastia Sulphate, Muriate, etc.; Sanguinarin, Sanguinarina Nitrate, Sulphate, etc.

Those concentrations whose names have the stars appear in the market in both pulverulent and oleoresinous forms.

Confection, Aromatic. (Electuaries.)

Mix aromatic powder with an equal weight of honey or a sufficient quantity to form a stiff paste.—U. S. P. 1870.

Confection of Calamus. (Sugared Calamus.—Candied Sweet Flag.)

Calamus root, peeled, sliced and cut into pieces about $\frac{1}{2}$ inch long.....av.oz. 8
Water.....fl.oz. 32
Sugar.....av.oz. 96

Macerate the root in the water for twelve hours, add the sugar, and heat, stirring constantly until perfectly dry. At first the evaporation may be conducted over a direct flame or fire, but toward the latter end of the operation, water-bath temperature only must be employed.

Confection of Copaiva. (Electuaire de Copahu.)

Balsam of copaiba.....av.oz. 4
Cubeb, powdered.....av.oz. 6
Catechu, powdered.....av.oz. 2
Oil of peppermint.....fl.dr. 1

Mix the whole well together.—Codex.

Confection of Figs. (Medicated Figs.)

Figs.....av.oz. 8
Water.....fl.oz. 16
Cinnamon, fine powder.....gr. 120
Sugar.....av.oz. 10
Senna, fine powder.....av.oz. $2\frac{1}{2}$

Pour hot water on the figs, macerate until softened, strain with expression, add the sugar, heat until a soft pulpy mass is ob-

tained, add the senna and cinnamon, and mix well.

See also "Confection of Senna," U. S. P..

Confection of Hollyhock, Thompsonian.

Poplar bark.....av.oz. $\frac{1}{2}$
Bayberry bark.....av.oz. $\frac{1}{2}$
Golden seal.....av.oz. $\frac{1}{2}$
Cloves.....av.oz. $\frac{1}{2}$
Cinnamon.....av.oz. $\frac{1}{2}$
Cypripedium.....av.oz. $\frac{1}{2}$
Capsicum.....gr. 110
Oil of pennyroyal.....fl.dr. 2
Hollyhock flowers.....av.oz. 8

Mix the first six ingredients in powder form, add the oil, and incorporate the whole with the flowers, mixing as well as possible, and forming balls the size of small marbles.

Confection of Opium. (Electuary of Theriac.—Theriac.)

I.
Compound powder of opium.....av.oz. $5\frac{1}{2}$
Simple syrup.....fl.oz. $11\frac{1}{2}$
—Brit. Pharm.

II.
Powdered opium.....gr. 260
Aromatic powder.....av.oz. $6\frac{1}{4}$
Clarified honey.....av.oz. 15
—U. S. P. 1870.

III.
Opium.....gr. 55
Angelica root.....gr. 275
Virginia snake root.....gr. 220
Valerian root.....gr. 110
Squill.....gr. 110
Zedoary.....gr. 110
Cassia bark.....gr. 550
Cardamom.....gr. 55
Cloves.....gr. 55
Myrrh.....gr. 55
Iron sulphate, crystal.....gr. 55
Glycerin,
Simple syrup,
Honey, equal parts of each,
enough to make.....av.oz. $12\frac{1}{2}$

Mix the ingredients above in powder form, or preferably mix them whole, and then reduce to powder; then add the glycerin, syrup and honey.—H.

The cardamom should be used without the capsule or enveloping membrane.

These preparations differ in many respects, but the most noteworthy difference is in the proportion of opium, the first two containing about $2\frac{1}{2}$ per cent of this drug, the last about 1 per cent, and the kind of confection

to be dispensed will depend on the nationality of the consumer or the kind he has been in the habit of using.

Confection of Pepper.

Black pepper, powdered.....	gr. 350
Caraway, powdered.....	gr. 525
Clarified honey.....	av.oz. 6
—Brit. Pharm.	

Confection of Prunes. (Medicated Prunes.)

Prunes, stoned.....	av.oz. 8
Water.....	fl.oz. 16
Citric acid, powdered.....	gr. 60
Tincture of ginger.....	fl.oz. 1
Sugar.....	av.oz. 10
Senna, fine powder.....	av.oz. 2½

Pour hot water on the prunes, macerate until softened, strain with expression, add the sugar and acid; heat until a pulpy mass is obtained, add the senna and tincture, and mix well.

See also "Confection of Senna," U. S. P.

Confection of Rhubarb, Compound.

Rhubarb, powdered.....	gr. 350
Fennel, powdered.....	gr. 350
Licorice root, powdered.....	av.oz. 1¾
Senna, powdered.....	av.oz. 1¾
Sugar, powdered.....	av.oz. 3½
Tamarind pulp, purified.....	av.oz. 3½
Syrup of manna.....	fl.oz. 4
—D.	

Confection of Sulphur.

Sulphur.....	av.oz. 6¾
Cream of tartar.....	av.oz. 1¾
Syrup of orange.....	fl.oz. 5
Tragacanth, powdered.....	av.oz. ¾
—Brit. Pharm.	

Confection of Tamarind.

I.	
Tamarind pulp.....	av.oz. 6½
Sugar, powdered.....	av.oz. 9½
—H.	

II.	
Tamarind pulp.....	av.oz. 2½
Sugar, powdered.....	av.oz. 2½
Senna, powdered.....	gr. 350
Cream of tartar.....	gr. 70
Manna.....	av.oz. 4
Warm water.....	av.oz. 8

Dissolve the manna in the water, strain, add the other ingredients, mix well, and evaporate the whole at a low temperature to proper consistency.—H.

Conserves.

In conformity to the custom of the United States pharmacopoeia, preparations formerly

under this title are here classed with the confections.

Copper, Aluminated. (Sapis divinus.

Augen Stein.)

Copper sulphate, pure.....	av.oz. 2
Potassium nitrate.....	av.oz. 2
Potassa alum.....	av.oz. 2
Camphor.....	gr. 55

Triturate the three salts separately to fine powder, then mix, melt carefully in a porcelain evaporating dish over a hot fire, then quickly add the camphor in a powdered state and previously mixed with an equal weight of powdered alum, and pour the whole out on a porcelain slab.—Germ. Pharm.

When cold, it may be broken into pieces or rubbed to powder, and then preserved in well-stoppered bottles.

Copper, Ammoniated.

Ammonium carbonate.....	av.oz. 8
Copper sulphate.....	av.oz. 4

Triturate together until effervescence ceases, then lay between folds of bibulous paper and dry. Keep in well-stoppered bottles.

Cordials.

The above title is applied to many preparations which vary greatly in character, and could not properly be placed under one heading. Some occur under other more appropriate titles in this part; others may be found in Parts II and IV. Consult index.

Cotton, Absorbent. (Purified Cotton, U. S. P.)

Ordinary cotton contains, in addition to the dirt and other matter that accompany it, some fatty and coloring matter. The fatty matter does not permit the cotton to absorb water or aqueous fluids to any appreciable extent, and the unpurified is therefore of no value for surgical and pharmaceutical purposes.

There are several methods by which ordinary cotton may be rendered absorbent. An easy process is to wash it repeatedly with ether, which, of course, extracts or dissolves out the fatty matter. The first portions of ether may be economically replaced by gasoline or petroleum ether, finishing the washing with ether so as to avoid the odor of gasoline.

in the product. By means of this process cotton can be rendered absorbent and be dried in a very few minutes.

The process adopted by manufacturers on the large scale is usually about as follows:

Boil any desired quantity of the best corded cotton with a 5-per-cent. solution of caustic potassa or soda for one-half hour, or until the cotton is entirely saturated with the solution, and the alkali has saponified all the fatty matter; wash thoroughly in clear water to remove all the soap and nearly all the alkali; press out the excess of water; place in a 5-per-cent solution of chlorinated lime, allowing to remain for 15 or 20 minutes; again wash, first in some clear water, then dip in water acidulated with hydrochloric acid, and wash again thoroughly in clear water; press out the excess of water and again boil for 15 or 20 minutes in 5-per-cent alkali solution; now wash well in clear water, dip in water acidulated with hydrochloric acid, and again wash thoroughly in clear water; now press out the water and dry.

Owing to the cellular character of cotton, it is very likely to absorb a liquid and not readily give it up again; hence when cotton is to be well washed, it should be kneaded with the hands or otherwise. In removing excess of water or other liquid, an ordinary clotheswringer will be found to serve the purpose admirably. Cotton batting, as purchased, ordinarily occurs in rolled sheets; if care be taken in the above manipulation, the product can be made to retain this "sheet" form.

Medicated Cottons.—These are prepared by impregnating good absorbent cotton by means of immersion in liquid containing the medicating substance. Sometimes a large excess of liquid is employed for impregnation, the excess being removed by subsequent expression; or else only so much is used as that when the whole is taken up by the cotton, the latter will contain the requisite or prescribed amount of medicament. In the former case, the expression may be by means of an instrument like an ordinary clotheswringer, conducting the expression so that the liquid which the cotton is allowed to retain will yield a proper strength of finished

product. In either case, therefore, the result is identical, and while preference is usually given, in the formulas which follow, to the use of a large amount of liquid, the other process may be substituted, the result always depending more on the care and skill of the operator than on any other circumstance. In impregnating cotton, it may be necessary to knead the latter with the liquid, and sometimes even to macerate for one or two hours; if the small quantity of liquid be used, then the cotton must be weighted down in some convenient manner. In expressing cotton after impregnating in a large quantity of liquid, it may be advisable to wrap the cotton in parchment paper to protect it from the press; if salicylic acid be present, the solution and cotton must not be allowed to come in contact with any iron parts. Cotton must always be passed through the press evenly to medicate uniformly.

Drying of impregnated cotton may be done on screens either in a drying closet or in a room which is dry and perfectly aseptic or clean.

Good absorbent cotton, when dipped in water, will take up or retain, after expression, twice its weight of liquid, each pound of dry cotton yielding therefore three pounds of moist cotton.

All prepared cottons should be kept in suitable receptacles or wrappers such as glass, parchment paper, paraffined paper, paraffined or resin-coated pasteboard boxes, etc., to prevent loss by evaporation or accession of septic matter.

Cotton, Aluminium Acetate, Burow.

Solution of aluminium acetate. . fl.oz. 16

Distilled water. fl.oz. 32

Absorbent cotton. av.oz. 16

Proceed as with borated cotton.—D.

Cotton, Antirheumatic. (Gicht Watte.)

I.

Oil of birch tar, rectified. drops 12

Oil of turpentine, rectified. drops 12

Oil of juniper wood. drops 12

Oil of cloves. drops 12

Oil of rosemary. drops 12

Camphor. gr. 20

Alcohol. fl.dr. 5½

Absorbent cotton. av.oz. 16

Dissolve the oils and camphor in the alcohol, filter, and moisten the cotton with the

filtrate in any convenient way, as, for example, by means of an atomizer. During this moistening the cotton should be picked into thin layers, and be turned about frequently so as to impregnate evenly. Dry by exposure to atmosphere for one hour, and wrap in waxed paper or other suitable container.—D.

II.

Red saunders.....	gr. 96
Benzoin.....	gr. 20
Peru balsam.....	gr. 5
Alcohol.....	fl.dr. 8

Macerate for several days, filter and impregnate cotton with filtrate as in the preceding.—H. modified.

Cotton, Arnicated.

Tincture of arnica.....	fl.oz. 2½
Glycerin.....	fl.oz. 2½
Alcohol.....	fl.oz. 34
Distilled water.....	fl.oz. 12
Absorbent cotton.....	av.oz. 16

Immerse the cotton in the liquid, press out to the weight of 48 av. ounces, dry carefully, and pack into containers.—D. modified.

The finished product represents 10 per cent of tincture of arnica of the weight of the cotton used. Inasmuch as tincture of arnica U. S. P. is double the strength of the tincture of the German Pharmacopœia, this 10 per cent corresponds to 20 per cent of the tincture of arnica of the latter work.

Cotton, Benzoated, Bruns, Jr.

	3 p. c.	4 p. c.
Benzoic acid.....	gr. 315	420
Castor oil.....	fl.oz. 1	1
Alcohol.....	fl.oz. 54	54
Absorbent cotton.....	av.oz. 16	16
	5 p. c.	10 p. c.
Benzoic acid.....	gr. 525	1050
Castor oil.....	fl.oz. 1	2
Alcohol.....	fl.oz. 54	51
Absorbent cotton.....	av.oz. 16	16

Dissolve the acid in the alcohol, add the oil, saturate the cotton with this liquid, prepared after any of the given proportions, then press it until it weighs 48 av. ounces, and dry it at a temperature not exceeding 30 degrees C.—D.

Cotton, Borated.

	5 per cent.
Boric acid.....	gr. 525
Distilled water, hot.....	fl.oz. 43
Absorbent cotton.....	av.oz. 16

10 per cent.

Boric acid.....	gr. 1050
Distilled water, hot.....	fl.oz. 40¼
Absorbent cotton.....	av.oz. 16

20 per cent.

Boric acid.....	av.oz. 4¾
Distilled water, hot.....	fl.oz. 40
Absorbent cotton.....	av.oz. 16

Dissolve the acid in the water, immerse the cotton in the solution, press out to the weight of 48 av. ounces, and proceed as before.—D. modified.

Cotton, Carbolated, Bruns, Jr.

5 per cent.

Carbolic acid, crystal.....	gr. 525
Castor oil.....	fl.dr. 4
Resin.....	av.oz. 4¾
Alcohol.....	fl.oz. 48¼
Absorbent cotton.....	av.oz. 16

10 per cent.

Carbolic acid, crystal.....	gr. 1050
Castor oil.....	fl.oz. 1
Resin.....	av.oz. 7¼
Alcohol.....	fl.oz. 42½
Absorbent cotton.....	av.oz. 16

Dissolve the resin in the mixed oil and alcohol by agitation, filter, impregnate the cotton as before, pressing out to the weight of 48 av. ounces, and drying without heat. Pack immediately in air-tight containers.—D.

Cotton, Cocaine.

Cocaine hydrochlorate.....	gr. 210
Distilled water.....	fl.oz. 7¼
Alcohol.....	fl.oz. 9¼
Absorbent cotton.....	av.oz. 16

Dissolve the cocaine salt in the water, add the alcohol, saturate the cotton with the liquid (the cotton being kept below it by means of weights, but on removal, it is to retain the whole of the liquid), and dry at 30 degrees C.—D.

The product contains 3 per cent of the alkaloidal salt.

Cotton, Cocaine-Borated.

Cocaine hydrochlorate.....	gr. 140
Boric acid.....	gr. 350
Carbolic acid, crystal.....	gr. 210
Glycerin.....	fl.dr. 10¼
Alcohol.....	fl.oz. 9¼
Distilled water, hot.....	fl.oz. 11¼
Absorbent cotton.....	av.oz. 16

Dissolve the boric acid in the distilled water and glycerin, add the cocaine salt, car-

bolic acid and alcohol, saturate the cotton as in the making of cocaine cotton, and dry by exposure to the air. This is considered useful in dressing burns and scalds.—D.

Cotton, Cocaine-Morphine.

Cocaine hydrochlorate.....	gr. 210
Morphine hydrochlorate.....	gr. 105
Alcohol.....	fl.oz. 18¾
Distilled water.....	fl.oz. 9¾
Absorbent cotton.....	av.oz. 16

Prepare this like the two preceding. This is used for tamponing carious teeth, to allay toothache.—D.

Cotton, Ichthiol.

20 per cent.

Ichthiol-ammonium.....	av.oz. 4¾
Alcohol.....	fl.oz. 11¾
Distilled water.....	fl.oz. 20½
Absorbent cotton.....	av.oz. 16

50 per cent.

Ichthiol-ammonium.....	av.oz. 12
Alcohol.....	fl.oz. 13¾
Distilled water.....	fl.oz. 22
Absorbent cotton.....	av.oz. 16

Dissolve the ichthiol in the alcohol and water, saturate the cotton with the solution, press out to the weight of 48 av.ounces, and dry at a temperature not to exceed 25 degrees C.—D.

Cotton, Iodized.

Iodine.....	gr. 700
Cotton.....	av.oz. 16

Place the iodine at the bottom of a wide-mouth glass vial, insert the cotton, tie over the mouth with parchment paper wetted with glycerin, place the vial in a water-bath of from 50 to 60 degrees C., and continue the heat until all of the iodine has been vaporized and the cotton is evenly impregnated with it. Pack in well-closed glass containers.—D.

The product is called a 10-per-cent cotton; practically it contains but 9 per cent of iodine.

Cotton, Iodol.

Iodol.....	gr. 1050
Glycerin.....	fl.dr. 10
Alcohol.....	fl.oz. 51
Absorbent cotton.....	av.oz. 16

Dissolve the iodol in the alcohol with the aid of a little heat (50 degrees C.), gradually add the glycerin, saturate the cotton with the solution, kneading thoroughly, and proceed

as described under iodoform cotton, pressing out to 48 av. ounces.—D.

The product is a 10-per-cent medicated cotton.

Cotton, Iodoform, Mosetig.

5 per cent.

Iodoform.....	gr. 525
Ether.....	fl.oz. 16¾
Alcohol.....	fl.oz. 40¾
Absorbent cotton.....	av.oz. 16

10 per cent.

Iodoform.....	gr. 1050
Castor oil.....	fl.dr. 5½
Resin.....	gr. 350
Ether.....	fl.oz. 25¾
Alcohol.....	fl.oz. 27½
Absorbent cotton.....	av.oz. 16

20 per cent.

Iodoform.....	av.oz. 4¾
Castor oil.....	fl.dr. 12
Resin.....	av.oz. 1½
Ether.....	fl.oz. 42½
Alcohol.....	fl.oz. 9¾
Absorbent cotton.....	av.oz. 16

Dissolve the iodoform in the ether and alcohol, add the resin and castor oil if they be used, agitate until dissolved, saturate the cotton with the solution, wrap in thin parchment paper, puncture a number of holes along the edge, and press out to the weight of 48 av. ounces. This work must be performed with a certain amount of celerity. Dry in the open air, excluding daylight during the entire operation.—D.

A better mode of preparation for iodoform cotton is to use only so much solution that, when all is absorbed, the fabric will contain the proper proportion.

Cotton, Mercuric Chloride. (Sublimated Cotton.)

1. Schede's process:

¼ per cent.

Mercuric chloride.....	gr. 26
Glycerin.....	fl.oz. 3¾
Alcohol.....	fl.oz. 13
Distilled water.....	fl.oz. 32
Absorbent cotton.....	av.oz. 16

½ per cent.

Mercuric chloride.....	gr. 52
Glycerin.....	fl.oz. 8¾
Alcohol.....	fl.oz. 13
Distilled water.....	fl.oz. 32
Absorbent cotton.....	av.oz. 16

Dissolve the corrosive sublimate in the

mixed liquids, filter, and impregnate the cotton as before.

2. Link and Voswinkel's process:

$\frac{1}{4}$ per cent.

Mercuric chloride.....	gr. 26
Lithium chloride.....	gr. 26
Alcohol.....	fl.oz. 18 $\frac{1}{2}$
Distilled water.....	fl.oz. 32
Absorbent cotton.....	av.oz. 16

$\frac{1}{2}$ per cent.

Mercuric chloride.....	gr. 52
Lithium chloride.....	gr. 52
Alcohol.....	fl.oz. 18 $\frac{1}{2}$
Distilled water.....	fl.oz. 32
Absorbent cotton.....	av.oz. 16

Proceed as before and press out to the weight of 48 av. ounces; dry at a temperature of 25 to 30 degrees C.

Ordinarily sublimated cotton suffers diminution in strength due to reduction of the mercuric chloride. This is ascribed to lack of care in preparing the absorbent cotton used, the presence of glycerin and of stearic acid to impart a brilliant whiteness, and creaking sound when pressed between the fingers, etc. The second process is supposed to yield a permanent product. The lithium chloride is intended to replace the glycerin of other processes.

3. With tartaric acid, $\frac{1}{4}$ per cent.:

Mercuric chloride.....	gr. 26
Tartaric acid.....	gr. 105
Alcohol.....	fl.oz. 27 $\frac{3}{4}$
Distilled water.....	fl.oz. 24
Absorbent cotton.....	av.oz. 16

Proceed according to the usual mode, press out to the weight of 48 av. ounces, and dry under exclusion of daylight.—D.

4. Lister's sero-sublimate cotton, $\frac{1}{2}$ per cent.:

Mercuric chloride.....	gr. 52
Horseblood-serum.....	av.oz. 12
Distilled water.....	fl.oz. 34 $\frac{1}{2}$
Absorbent cotton.....	av.oz. 16

Dissolve the corrosive sublimate by trituration in the blood-serum, add the water, and saturate the cotton with the liquid; press out to 48 av. ounces.

If horseblood-serum cannot be had, dissolve 52 gr. of corrosive sublimate and 210 gr. of sodium chloride, by trituration in 770 gr. of egg-albumen diluted with 46 fluid-ounces of distilled water, and in this soak the cotton,

Dry at a temperature not exceeding 30 degrees C., and keep from the light.—D.

This cotton really contains mercury in the form of albuminate.

5. Sal alembroth cotton:

Mercuric chloride.....	gr. 26
Ammonium chloride.....	gr. 11
Alcohol.....	fl.oz. 9 $\frac{1}{4}$
Distilled water.....	fl.oz. 38 $\frac{1}{2}$
Absorbent cotton.....	av.oz. 16

Immerse the cotton in the solution and press out to the weight of 48 av. ounces; dry in the dark.—D.

Cotton, Naphthalin.

Naphthalin.....	gr. 1050
Resin.....	gr. 210
Castor oil.....	fl.dr. 2 $\frac{1}{2}$
Alcohol.....	fl.oz. 52
Absorbent cotton.....	av.oz. 16

Dissolve the solids in the liquids with the aid of heat, soak the cotton in the hot solution, and quickly express to 48 av. ounces; dry by exposure to air.—D.

The product is a 10-per-cent medicated cotton.

Cotton, Resorcin.

3 per cent.

Resorcin.....	gr. 315
Glycerin.....	fl.dr. 5 $\frac{1}{2}$
Alcohol.....	fl.oz. 16 $\frac{3}{4}$
Distilled water.....	fl.oz. 31
Absorbent cotton.....	av.oz. 16

5 per cent.

Resorcin.....	gr. 525
Glycerin.....	fl.oz. 1
Alcohol.....	fl.oz. 16
Distilled water.....	fl.oz. 31
Absorbent cotton.....	av.oz. 16

Proceed in the usual manner, pressing out to the weight of 48 av. ounces; dry at a temperature between 25 and 30 degrees C.

Cotton, Salicylated.

1. Process of Bruns, Jr.:

5 per cent.

Salicylic acid.....	gr. 525
Castor oil.....	fl.dr. 6
Alcohol.....	fl.oz. 53
Absorbent cotton.....	av.oz. 16

10 per cent.

Salicylic acid.....	gr. 1050
Castor oil.....	fl.dr. 12
Alcohol.....	fl.oz. 51
Absorbent cotton.....	av.oz. 16

Dissolve the acid in the alcohol, add the oil, and proceed in the usual way, pressing

out to the weight of 48 av. ounces; dry at a temperature between 25 and 80 degrees C.

—D.

2. Thiersch's process:

4 per cent.

Salicylic acid.....gr.	420
Glycerin.....fl.dr.	1
Alcohol.....fl.oz.	8
Distilled water, hot.....fl.oz.	39
Absorbent cotton.....av.oz.	16

10 per cent.

Salicylic acid.....gr.	1050
Glycerin.....fl.dr.	2½
Alcohol.....fl.oz.	15½
Distilled water, hot.....fl.oz.	31
Absorbent cotton.....av.oz.	16

Dissolve the acid in alcohol, add the glycerin and water, and proceed as before.

Cotton, Styptic. (Hemostatic Cotton.—Ferrated Cotton.)

I.

Absorbent cotton,
Solution of chloride of iron,
Glycerin,
Water.....of each sufficient.

Mix the liquids in the proportion of 5 parts of the iron solution, 1 part of glycerin, and 4 parts of water, in such quantities that the cotton shall be completely immersed in the liquid when gently pressed. Allow the cotton to remain in the liquid one hour, then remove it, press it until it has been brought to twice its original weight, spread it out in thin layers, in a warm place, protected from dust and light, and when it is sufficiently dry, transfer it to well-closed receptacles.—N. F.

II.

Solution of ferric chloride.....fl.oz.	6½
Glycerin.....fl.oz.	1
Distilled water.....fl.oz.	18
Alcohol.....fl.oz.	18½
Absorbent cotton.....av.oz.	16

Impregnate and press the cotton in the usual manner; dry with exclusion of daylight, and keep the product in amber-colored bottles.—D. modified.

III.

Solution of chloride of iron (Germ. Pharm.sp.gr. 1.28).....fl.oz.	9
Glycerin.....fl.oz.	1
Water.....fl.oz.	19¼
Alcohol.....fl.oz.	18½
Purified cotton.....av.oz.	16

Mix the liquids, immerse the cotton there-

in, then press it until the product weighs 48 av. ounces, and dry it at a gentle heat, with exclusion of light.

One hundred parts contain about 25 parts of anhydrous ferric chloride.

Keep the product protected against light.

—Germ. Form.

The 9 fluidounces of solution of ferric chloride of the German pharmacopœia used in the last formula corresponds to 7 fluidounces of the solution of the United States Pharmacopœia.

Cotton, Tannin-Carbolated.

(Tannin, 10 per cent; carbolic acid, 8 per cent)

Tannic acid.....gr.	1050
Carbolic acid, crystal.....gr.	840
Castor oil.....fl.oz.	4
Alcohol.....fl.oz.	46½
Absorbent cotton.....av.oz.	16

Dissolve the acids in the alcohol and oil, impregnate and press the cotton in the usual manner, and dry in the open air without heat.—D.

Cotton, Thymolated, Ranke.

2 per cent.

Thymol.....gr.	210
Resin.....gr.	420
Spermaceti.....av.oz.	6½
Alcohol.....fl.oz.	46½
Absorbent cotton.....av.oz.	16

5 per cent.

Thymol.....gr.	525
Resin.....gr.	1050
Spermaceti.....av.oz.	7½
Alcohol.....fl.oz.	48
Absorbent cotton.....av.oz.	16

Effect solution and saturation at an elevated temperature, pressing out, while still warm, to the weight of 48 av. ounces; dry in the open air.—D.

Cotton, Zinc Chloride, Bardeleben.

Zinc chloride.....gr.	1050
Distilled water, hot.....fl.oz.	43½
Absorbent cotton.....av.oz.	16

Proceed as in making borated cotton.—D.

The product is a 10-per-cent medicated cotton.

Decoction of Barley. (Barley Water.)

Pearl barley.....av.oz.	1½
Distilled water.....fl.oz.	24

Wash the barley with cold water, and reject the washings; boil the washed barley

with the distilled water for 20 minutes in a covered vessel, and strain. The product is about 16 fluidounces.—Brit. Pharm.

Decoction of Broom.

Broom tops (*scoparius*).....gr. 350
Distilled water.....fl.oz. 16

Boil in a covered vessel for 10 minutes, strain and pour water over the strainer until the colature measures 16 fluidounces.—Brit. Pharm.

Decoction of Buckthorn, Compound.

Buckthorn bark, cut.....gr. 720
Rhubarb.....gr. 144
Hops.....gr. 36
Carduus mariana seeds.....gr. 36
Distilled water.....sufficient

Heat the buckthorn with 18 fluidounces of distilled water for 30 minutes, then add the other ingredients, heat again for 10 minutes, strain, and add enough distilled water through the strainer to make the colature measure 16 fluidounces.

It is advisable to macerate the buckthorn with the water for at least 2 hours before heating.—D.

Decoction of Dandelion.

Dandelion, sliced and bruised...gr. 350
Water, enough to make.....fl.oz. 16

Boil the dandelion with 16 fluidounces of water for 10 minutes, strain and add enough water through the strainer to make the colature measure the required amount.—Brit. Pharm.

Decoction of Granatum.

Pomegranate bark, cut.....av.oz. 1¼
Distilled water.....sufficient

Add 32 fluidounces of water to the bark, boil down to 16 fluidounces, strain and add, if necessary, enough water through the strainer to make the colature measure 16 fluidounces.—Brit. Pharm.

Decoction of Guaiac, Compound. (Decoctum Lignorum.)

Guaiac wood.....gr. 360
Sarsaparilla, cut.....gr. 360
Licorice root, cut.....gr. 72
Sassafras wood, cut.....gr. 72
Water.....sufficient

Macerate the sarsaparilla with 20 fluidounces of water for 24 hours, add the guaiac,

heat for 1 hour, then add the licorice and sassafras, and strain in 15 minutes, adding enough water through the colature to make up 16 fluidounces.—Belg. Pharm.

Decoction of Pareira.

Pareira root, in No. 20 powder.av.oz. 1
Distilled water.....sufficient.

Boil the drug with 16 fluidounces of water for 15 minutes in a covered vessel, strain and add enough water through the strainer to make up 16 fluidounces.—Brit. Pharm.

Decoction of Sarsaparilla,

Stronger Compound.

(Stronger Zittmann's Decoction.)

Sarsaparilla, cut fine.....gr. 600
Water.....fl.oz. 64
Red sulphide of mercury.....gr. 5
Calomel.....gr. 24
Alum, powdered.....gr. 40
Sugar, powdered.....gr. 40
Anise, bruised.....gr. 24
Fennel, bruised.....gr. 24
Licorice, cut.....gr. 72
Senna, cut.....gr. 120

Macerate the sarsaparilla with the water for 24 hours, and strain; triturate the two mercury salts, alum, and sugar together, tie the mixed powders into a folded piece of muslin, suspend this into the infusion of sarsaparilla previously put into an earthen vessel, and evaporate the liquid down to 32 fluidounces. While yet hot, add the remaining drugs, and when cold, strain without pressure, set the decoction aside to settle, and decant the clear liquid.

The formula given above is the one formerly in vogue. The formula recognized by the German pharmacopœia contains no mercurials whatever; the proportions of the remaining ingredients is somewhat different, although the difference is a very immaterial one, and the water added to the drugs is 34 fluidounces, the colature; after heating for some hours, being made up to 32 fluidounces.

The formula given is an unscientific one, but contains mercury in some form, unless the evaporation has been conducted in metallic vessels, and hence is often preferred on this account.

The second edition of the German pharmacopœia recognized this preparation under the title here given, but the present (third) edi-

tion calls it simply "compound decoction of sarsaparilla" and does not recognize the weaker decoction at all.

Decoction of Sarsaparilla, Weaker Compound.

(Weaker Zittmann's Decoction.)

Residue from preceding decoction.	
Sarsaparilla, cut fine.....	gr. 384
Water.....	fl.oz. 96
Cardamom, bruised.....	gr. 20
Cinnamom, bruised.....	gr. 20
Lemon peel, cut.....	gr. 20
Licorice root, cut.....	gr. 20

Mix the residue above specified with the sarsaparilla, and boil the whole with the water until the whole is reduced to 32 fluid-ounces, and while still hot, add the remaining drugs; allow to cool, strain, set aside to settle, and decant the clear liquid.

As stated in the preceding article, this preparation is not recognized at all by the present German pharmacopœia, but the second edition did consider it, and gave for it the following formula:

Sarsaparilla, cut.....	gr. 288
Water.....	sufficient
Lemon peel, cut.....	gr. 80
Cinnamon, bruised.....	gr. 80
Cardamom, bruised.....	gr. 80
Licorice root, cut.....	gr. 80

Macerate the sarsaparilla with 80 fluid-ounces of water for 24 hours, then heat in a covered vessel on a water bath for 3 hours, stirring occasionally; add the other ingredients, macerate for fifteen minutes, strain the liquid with expression, allow the decoction to settle, pour off all the clear liquid, and add enough water to it to make 32 fluid-ounces.

Discs. (Lamellæ.)

These are prepared by adding to a concentrated solution of gelatin some glycerin and a solution of a medicating ingredient. While hot this is poured on a perfectly level and polished surface, and after drying the discs are cut out from the sheet, each disc being 1-25th inch in thickness and weighing about 1-50th grain. The discs of the British pharmacopœia are used only in ophthalmic practice. They are, as follows:

Discs of Atropine, each containing 1-5000th grain of atropine sulphate.

Discs of Cocaine, each containing 1-200th grain of cocaine hydrochlorate.

Discs of Physostigmine, each containing 1-1000th grain of physostigmine.

Drops, Cholera.

Various preparations commonly known by this title will be found under the "Mixtures."

Drops, Cordial Warner's.

Senna.....	gr. 72
Coriander.....	gr. 36
Fennel.....	gr. 36
Cochineal.....	gr. 15
Extract of licorice.....	gr. 15
Spanish saffron.....	gr. 15
Raisins.....	av. oz. 2½
Water.....	fl.oz. 8
Alcohol.....	fl.oz. 9¼

Mix, macerate for 7 days, agitating occasionally, and filter.—H. modified.

Drops, Cramp. (Krampf Tropfen.)

The "red," also known as Herzstaerkungs Tropfen and Tinctura Apoplectica rubra, is made after one of the following formulæ:

1. Aromatic tincture.....	fl. dr. 4
Tincture of catechu.....	fl. dr. 4
Tincture of cinnamon.....	fl. dr. 4
Red saunders, rasped.....	gr. 64
Alcohol.....	fl.oz. 6¾
Spirit of ether.....	fl.oz. 7¼

Macerate for several days, and strain through cotton.—H.

2. Oil of peppermint.....	drops 3
Oil of anise.....	drops 5
Oil of cinnamon.....	drops 8
Tincture of catechu.....	fl.oz. 1
Aromatic tincture.....	fl.oz. 2
Chloroform.....	fl. dr. ½
Spirit of ether.....	fl.oz. 5
Alcohol.....	fl.oz. 7½

—H.

The "white" is prepared from the following:

Chloroform.....	m. 100
Oil of peppermint.....	drops 10
Ether.....	fl.oz. 4
Alcohol.....	fl.oz. 12

Drops, Gold. (Gold Tropfen.—Tinctura

Dulcis.)

Potassium acetate.....	gr. 112
Caramel.....	gr. 128
Hydrochloric ether (ethyl chloride).....	fl.oz. 1½
Acetic ether.....	fl. dr. 1½
Syrup.....	fl.oz. 1½

Alcohol, sufficient to make fl.oz. 16.—H. modified.

In the absence of the above the aromatic

tincture of the National Formulary may be dispensed.—H.

The ethereal tincture of chloride of iron of the National Formulary is also known as Lamotte's Gold Drops, and this is what may be desired when "gold drops" are requested.

Drops, Dysmenorrhœa,

Rademacher. (Guttæ ad Menstrua Tormentosa Rademacheri.)

Tincture of nux vomica.

Tincture of castor, equal parts of each by measure.—H.

Drops, Jesuit. (Guttæ Jesuitarum.)

Guaiac resin, powderedav.oz. 8½
Peru balsamgr. 96
Sassafras bark, cutav.oz. 2¼
Alcoholfl.oz. 16

Mix, macerate for 7 days, agitating occasionally, and filter.

Drops, Mother.

Valerianav.oz. 2¼
Galangagr. 60
Red saundersgr. 10
Compound spirit of etherfl.dr. 2
Spirit of cinnamonfl.dr. 1
Diluted alcoholsufficient

Reduce the three drugs to fine powder and extract by percolation with diluted alcohol; the percolate obtained should be of such amount that when added to the two spirits the product will measure just 16 fluidounces.

Very frequently simply tincture of valerian is dispensed as "mother drops."

Other "drops" may be found scattered throughout this work (consult index).

Eau Sedative de Raspail.

Water of ammoniafl.oz. 2
Spirit of camphorfl.dr. 1½
Chloride of sodiumav.oz. 1
Water, sufficient to makefl.oz. 16

ELIXIRS.

The presentation of this multifarious array of elixirs perhaps requires an explanation. The catalogues of the large manufacturers list all of the elixirs herein mentioned, and this fact indicates a demand for them. In order, therefore, that retail pharmacists may supply this demand without recourse to the manufacturer or the wholesaler, we have given reliable formulæ for these preparations.

Elixir of Acetanilid. (Elixir of Antifebrin.)

Acetanilidgr. 128
Simple elixirfl.oz. 16

Dissolve by agitation. Each fluidram contains one grain of acetanilid.

Elixir, Adjuvant.

Sweet orange peelgr. 120
Wild cherrygr. 240
Licorice root, Russiangr. 480
Coriandergr. 60
Carawaygr. 60
Simple syrupfl.oz. 5
Alcohol
Waterof each, sufficient

Reduce the wild cherry to a moderately coarse powder, moisten it with 4 fluidrams of water, and set aside for 12 hours. Reduce the other solids also to a moderately coarse powder, mix this intimately with the wild cherry, and having mixed 1 volume of alcohol with 2 volumes of water, moisten the powder with 4 fluidrams of the mixture, and pack tightly in a percolator. Then gradually pour menstruum on top until 11 fluidounces of percolate are obtained. Mix this with the syrup and filter.—N. F.

Elixir of Aletris.

Fluid extract of aletris farinosafl.oz. 2
Simple elixirfl.oz. 14

Mix, let stand for several days, and filter.

Each fluidram represents 7½ grains of aletris farinosa.

Elixir of Aloin, Strychnine and Belladonna.

Fluid extract of belladonna rootm. 64
Elixir of aloin and strychnine, enough to makefl.oz. 16

Each fluidram contains ¼ gr. of aloin, and 1-100 gr. of strychnine, and represents ½ gr. of belladonna root.

Elixir of Aloin and Strychnine.

Aloingr. 32
Strychnine sulphategr. 1¼
Simple elixirfl.oz. 16

Dissolve the alkaloidal salt in the elixir by trituration in a mortar, or agitation in a bottle; add the aloin, agitate until dissolved, and filter if necessary.

Each fluidram contains ¼ gr. aloin, and 1-100 gr. of strychnine sulphate.

Elixir of Ammonium Bromide.

Ammonium bromidegr. 640
Citric acidgr. 80
Aromatic elixir enough to make fl.oz. 16

Dissolve the ammonium bromide and the citric acid in about 8 fluidounces of aromatic elixir, by agitation; then add the remainder of the elixir, and filter, if necessary.

Each fluidram contains 5 gr. of ammonium bromide.—N. F.

Elixir of Ammonium Chloride.

Ammonium chloride.....gr. 1280
Simple elixir, enough to make fl.oz. 16

Dissolve by agitation, and filter, if necessary.

Each fluidram contains 10 gr. of ammonium chloride.

Elixir of Ammonium Chloride and Licorice, Compound.

Ammonium chloride.....gr. 640
Compound elixir of licorice,
enough to make.....fl.oz. 16

Dissolve by agitation, and filter, if necessary.

Each fluidram contains 5 gr. of ammonium chloride.

Elixir of Ammonium Valerianate.

1. Ammonium valerianate.....gr. 256
Chloroformm. 6
Tincture of vanillafl.dr. 2
Compound tincture of cudbear fl.dr. 2
Water of ammonia,
Aromatic elixir.....of each sufficient

Dissolve the ammonium valerianate in about 10 fluidrams of aromatic elixir, in a graduated vessel, and add enough water of ammonia, in drops, until a faint excess of it is perceptible in the liquid; then add the chloroform, tincture of vanilla, and compound tincture of cudbear, and finally enough aromatic elixir to make 16 fluidounces. Filter if necessary.

Each fluidram contains 2 gr. of ammonium valerianate.—N. F.

2. Goddard's formula, modified:

Valerianic acid, from the root . fl.dr. 3
Ammonium carbonate.....sufficient
Distilled water.....fl.oz. 4
Elixir of curacao... . fl.oz. 10
Orange flower water.....fl.oz. 4
Mucilage of gum arabic.....fl.oz. 1
Tincture of cudbearfl.dr. 2

Add the acid to the water and neutralize

3

with ammonium carbonate; mix with the other ingredients, and filter.

Elixir of Ammonium Valerianate and Chloral Hydrate.

Chloral hydrate.....gr. 640
Elixir of ammonium valerianate,
N. F., enough to make.....fl.oz. 16

Dissolve by agitation and filter if necessary.

Each fluidram contains 5 gr. of chloral hydrate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate with Cinchonidine.

Cinchonidine sulphate.....gr 64
Elixir of ammonium valerianate,
N. F., enough to make.....fl.oz. 16

Dissolve by agitation. The elixir of ammonium valerianate employed in making this preparation should be exactly neutral.

Each fluidram contains $\frac{1}{2}$ gr. of cinchonidine sulphate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate, Cinchonidine and Iron Pyrophosphate.

Iron pyrophosphate, soluble.....gr. 64
Distilled water, hot.....fl.dr. 4
Elixir of ammonium valerianate
with cinchonidine, enough to
make.....fl.oz. 16

Dissolve the iron salt in the water and add the elixir of ammonium valerianate with cinchonidine.

Each fluidram contains nearly 2 gr. of ammonium and $\frac{1}{2}$ gr. of cinchonidine sulphate, as well as $\frac{1}{2}$ gr. of iron pyrophosphate.

Elixir of Ammonium Valerianate with Cinchonidine, Iron Pyrophosphate and Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
Distilled water.....fl.dr. 2
Elixir of ammonium valerianate, cinchonidine and iron
pyrophosphate, enough to
make.....fl.oz. 16

Dissolve the strychnine sulphate in the water, and add the elixir.

Each fluidram contains nearly 2 gr. of ammonium valerianate, $\frac{1}{2}$ gr. of cinchonidine sulphate and $\frac{1}{2}$ gr. of iron pyrophosphate, as well as $\frac{1}{16}$ gr. of strychnine sulphate.

Elixir of Ammonium Valerianate with Cinchonidine, Iron Pyrophosphate and Quinine.

Iron pyrophosphate, soluble.....gr. 64
Distilled water, hot.....fl.dr. 4
Elixir of ammonium valerianate,
with cinchonidine and quinine,
enough to make.....fl.oz. 16

Dissolve the iron salt in the water and add the elixir.

Each fluidram contains nearly 2 gr. of ammonium valerianate, $\frac{1}{2}$ gr. of cinchonidine sulphate, and $\frac{1}{4}$ gr. of quinine hydrochlorate, as well as $\frac{1}{2}$ gr. of iron pyrophosphate.

Elixir of Ammonium Valerianate with Cinchonidine, Iron Pyrophosphate, Quinine and Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
Distilled water.....fl.dr. 2
Elixir of ammonium valerianate,
cinchonidine, iron pyrophos-
phate, and quinine, enough to
make.....fl.oz. 16

Dissolve the strychnine salt in the water and add the elixir.

Elixir of Ammonium Valerianate with Cinchonidine and Quinine.

Quinine hydrochlorate.....gr. 32
Cinchonidine sulphate.....gr. 64
Elixir of ammonium valerianate,
N. F., enough to make.....fl.oz. 16

Mix, dissolve by agitation and filter.

Each fluidram contains 2 gr. of ammonium valerianate, $\frac{1}{2}$ gr. of cinchonidine sulphate and $\frac{1}{4}$ gr. of quinine hydrochlorate.

Elixir of Ammonium Valerianate with Cinchonidine, Quinine and Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
Distilled water.....fl.dr. 2
Elixir of ammonium valerianate
with cinchonidine and qui-
nine, enough to make.....fl.oz. 16

Dissolve the strychnine in the water and add the elixir.

Elixir of Ammonium Valerianate with Cinchonidine and Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
Distilled water.....fl.dr. 2
Elixir of ammonium valerianate
with cinchonidine, enough to
make.....fl.oz. 16

Dissolve the strychnine sulphate in the

water, add the elixir and filter if necessary.

Each fluidram contains $\frac{1}{15}$ gr. of strychnine sulphate, $\frac{1}{2}$ gr. of cinchonidine sulphate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate and Iron.

Iron pyrophosphate, soluble.....gr. 128
Distilled water, hot.....fl.oz. 1
Elixir of ammonium valerianate,
N. F.....fl.oz. 15

Dissolve the iron salt in the water and add the elixir.

Each fluidram contains 1 gr. of iron pyrophosphate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate with Iron and Quinine.

Quinine hydrochlorate.....gr. 32
Iron pyrophosphate, soluble.....gr. 64
Distilled water, hot.....fl.dr. 4
Elixir of ammonium valerianate,
N. F., enough to make.....fl.oz. 16

Add the quinine salt to 15 fluidounces of elixir, dissolve by agitation, dissolve the iron salt in the water, mix the two solutions, and add the remainder of the water.

Each fluidram contains $\frac{1}{4}$ gr. of quinine hydrochlorate, $\frac{1}{2}$ gr. of iron pyrophosphate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate with Iron, Quinine and Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
Distilled water.....fl.dr. 2
Elixir of ammonium valerianate
with iron and quinine, enough
to make.....fl.oz. 16

Dissolve the strychnine sulphate in the water and add the elixir.

Elixir of Ammonium Valerianate with Quinine.

Quinine hydrochlorate.....gr. 32
Elixir of ammonium valerianate.....fl.oz. 16

Dissolve the quinine hydrochlorate in the elixir by agitation, and, if necessary, by occasionally immersing the bottle containing the ingredients in hot water, until solution has been effected; filter if necessary.

Each fluidram contains $\frac{1}{4}$ gr. of quinine hydrochlorate and 2 gr. of ammonium valerianate.—N. F.

Elixir of Ammonium and Morphine Valerianates.

Morphine valerianate.....gr. 8
 Elixir of ammonium valerianate,
 N. F.....fl.oz. 16

Dissolve by agitation. The elixir of ammonium valerianate used in making the above should not be alkaline.

Each fluidram contains $\frac{1}{4}$ gr. of morphine valerianate and 2 gr. of ammonium valerianate.

Elixir of Ammonium, Quinine and Strychnine Valerianates.

Strychnine (alkaloid).....gr. $1\frac{1}{4}$
 Valerianic acid.....sufficient
 Quinine valerianate.....gr. 64
 Elixir of ammonium valerianate,
 N. F., enough to make....fl.oz. 16

Dissolve the strychnine in 2 fluidrams of the elixir of ammonium valerianate by the aid of a slight excess of valerianic acid. Triturate the quinine salt with this solution and add the remainder of the elixir of ammonium valerianate, agitate occasionally until dissolved, then filter.

In case the valerianic acid is in such excess that its odor is perceptible, the liquid must be cautiously neutralized by stirring it with a glass rod which is repeatedly moistened with very dilute ammonia water. Any excess of the latter must be avoided, as otherwise alkaloidal strychnine will be precipitated.

Each fluidram contains $\frac{1}{16}$ gr. of strychnine valerianate, $\frac{1}{4}$ gr. of quinine valerianate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate with Sumbul. (Elixir of Ammonium Valerianate with Musk Root.)

Fluid extract of sumbul.....fl.oz. 2
 Elixir of ammonium valerianate.fl.oz. 14

Mix, let stand for several hours and filter through purified talcum.

Each fluidram contains nearly 2 gr. of ammonium valerianate and represents $7\frac{1}{2}$ gr. of sumbul root.

Elixir of Ammonium Valerianate with Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
 Elixir of ammonium valerianate.....fl.oz. 16

Mix, dissolve by agitation, and filter.

The elixir of ammonium valerianate must not be alkaline.

Elixir of Anise. (Aniseed Cordial.)

Anethol.....m. 25
 Oil of fennel.....drops 4
 Spirit of bitter almond.....fl.dr. $1\frac{1}{2}$
 Deodorized alcohol.....fl.oz. 4
 Simple syrup.....fl.oz. 10
 Distilled water.....fl.oz. 2
 Magnesium carbonate, powder.gr. 120

Mix the anethol, oil and spirit with the alcohol, add the syrup and water, and set the mixture aside for 12 hours. Then mix it intimately with the magnesium carbonate, and filter it through a wetted filter, returning the first portions of the filtrate until it runs through clear.—N. F.

Elixir of Antipyrin.

Antipyrin.....gr. 640
 Simple elixir.....fl.oz. 16

Dissolve by agitation.

Each fluidram contains 5 gr. of antipyrin.

Elixir of Arbor Vitæ. (Elixir of Thuja Occidentalis.)

Fluid extract of arbor vitæ....fl.dr. $10\frac{1}{2}$
 Simple elixir, enough to make..fl.oz. 16

Mix, allow to stand for several hours and filter.

Each fluidram represents 5 gr. of arbor vitæ.

Elixir of Arsenic. (Elixir of Potassium Arsenite.)

Fowler's solution.....fl.dr. $10\frac{1}{2}$
 Simple elixir, enough to make..fl.oz. 16

Each fluidram contains 5 minims of Fowler's solution, which represents $\frac{1}{16}$ gr. of arsenious acid.

Elixir, Aromatic.

Compound spirit of orange....fl.dr. $6\frac{1}{2}$
 Simple syrup.....fl.oz. 24
 Calcium phosphate, precipitated.av.oz. 1
 Alcohol,
 Distilled water, of each.....sufficient.

To the spirit add enough alcohol to make 16 fluidounces. To this solution add the syrup in several portions, agitating after each addition, and afterwards add, in the same manner, 24 fluidounces of water. Mix the calcium phosphate intimately with this liquid, and filter through a well-wetted filter, returning the first portions until a clear

liquid is obtained. Lastly wash the filter with a mixture of 1 volume of water and 8 of alcohol, until the filtrate measures 64 fluidounces.—U. S. P.

Elixir of Arsenic and Iron Chloride.

Refer to "Elixir of Chlorides of Arsenic and Iron."

Elixir of Arsenic, Iron and Mercury Chlorides.

Refer to Elixir of Chlorides of Arsenic, Iron and Mercury.

Elixir of Arsenic, Iron and Quinine.

Refer to Elixir of Iron, Quinine and Arsenic.

Elixir of Arsenic and Mercury Iodides.

Donovan's solution.....fl.dr. 10½
Simple elixir, enough to make.fl.oz. 16

Each fluidram contains $\frac{1}{10}$ gr. each of red iodide of mercury and iodide of arsenic.

Elixir of Arsenic and Quinine.

Solution of arsenious acid....fl.dr. 10½
Quinine sulphate.....gr. 128
Simple elixir, enough to make.fl.oz. 16

Dissolve by agitation and filter if necessary.

Each fluidram contains $\frac{1}{4}$ gr. of arsenious acid, and 2 gr. of quinine sulphate.

Elixir of Arsenic and Strychnine.

Solution of arsenious acid....fl.dr. 10½
Strychnine sulphate.....gr. 1¼
Simple elixir, enough to make.fl.oz. 16

Dissolve by agitation and filter.

Each fluidram contains $\frac{1}{8}$ gr. of arsenious acid and $\frac{1}{100}$ gr. strychnine sulphate.

Elixir of Beef.

Extract of beef.....gr. 256
Distilled water.....fl.oz. 1
Simple elixir, enough to make.fl.oz. 16

Dissolve the extract in the water, add the elixir, let stand for several days if possible, and filter.

Each fluidram contains 2 gr. of extract of beef.

The extract of beef suitable for this and similar preparations is that which is prepared by Liebig's method.

Elixir of Beef, Bismuth, Cinchona and Iron.

Extract of beef.....gr. 256
Distilled water.....fl.oz. 1
Elixir of bismuth, cinchona and iron, enough to make.....fl.oz. 16

Dissolve the extract in the water, add the elixir, let stand for several days if possible, and filter.

Elixir of Beef and Cinchona.

Extract of beef.....gr. 256
Distilled water.....fl.oz. 1
Detannated elixir of cinchona, N. F., enough to make.....fl.oz. 16

Dissolve the extract in the water, add the elixir, let stand for several days if possible, and filter.

Each fluidram contains 2 gr. of extract of beef and represents about 1½ gr. of cinchona.

Elixir of Beef, Cinchona and Iron.

Extract of beef.....gr. 256
Distilled water.....fl.oz. 1
Elixir of cinchona and iron, N. F., enough to make.....fl.oz. 16

Dissolve the extract in the water, add the elixir, allow to stand for several days if possible, and filter.

Each fluidram contains 2 gr. of extract of beef and nearly 2 gr. of iron phosphate and represents about 1½ gr. of cinchona.

Elixir of Beef, Cinchona, Iron and Strychnine.

Strychnine sulphate.....gr. 1¼
Distilled water.....fl.oz. ½
Elixir of beef, iron and cinchona, enough to make.....fl.oz. 16

Dissolve the alkaloidal salt in the water, add to the elixir, and filter.

Elixir of Beef, Coca and Iron.

Iron phosphate, soluble.....gr. 256
Extract of beef.....gr. 256
Distilled water, hot.....fl.oz. 2
Elixir of coca, N. F., enough to make.....fl.oz. 16

Dissolve the iron salt and extract each in one ounce of water, mix with the elixir, allow to stand for several days, and filter.

Each fluidram contains 2 gr. each of iron phosphate and extract of beef and represents about 7 gr. of coca.

Elixir of Beef and Iron.

Citrate of iron and ammonium...gr. 128

Distilled water, warm.....fl.oz. 1

Elixir of beef, enough to make.fl.oz. 16

Dissolve the iron salt in the water and add the elixir.

Each fluidram contains 1 gr. of iron salt and $1\frac{1}{4}$ gr. of extract of beef.

Elixir of Beef, Iron and Malt.

Extract of beef.....gr. 256

Extract of malt (thick).....av.oz. 4

Citrate of iron and ammonium...gr. 128

Spirit of orange.....fl.dr. 1

Alcohol.....fl.oz. 2

Sherry wine.....fl.oz. 9

Water,

Ferric hydrate, of each.....sufficient

Dissolve the extract of beef in one fluidounce of hot water, and add the alcohol containing the spirit of orange, then the wine with which the malt extract has previously been mixed; shake frequently during 2 or 3 days, filter, and wash the filter with a mixture of alcohol and water in the proportion of 1 of the former to 4 of the latter by measure, so as to obtain a filtrate of 15 fluid ounces. Dissolve the iron salt in 6 fluidrams of water, add to the filtrate, and then add enough water to make 16 fluidounces.

The ferric hydrate may be prepared as described under the heading of elixir of gentian; the amount to be used must be sufficient to detannate the mixture, and if an insufficient amount has been used, more must be added, allowing to stand for several days more. The test to be applied is the usual one—filtering a small amount of liquid and testing the filtrate with solution of iron chloride to note if any discoloration occur.

Elixir of Berberine.

Berberine phosphate.....gr. 32

Distilled water, hot.....fl.oz. 1

Simple elixir.....fl.oz. 15

Dissolve the berberine in the water and add the elixir.

Each fluidram contains $\frac{1}{4}$ gr. of berberine phosphate.

Elixir of Berberine and Iron.

Iron pyrophosphate, soluble...gr. 128

Distilled water, hot.....fl.oz. 1

Elixir of berberine, enough to

make.....fl.oz. 16

Dissolve the iron salt in the water, add the elixir, and filter if necessary.

Each fluidram contains 1 gr. of iron pyrophosphate and nearly $\frac{1}{4}$ gr. of berberine phosphate.

Elixir of Bismuth.

I.

Bismuth and ammonium citrate...gr. 256

Water, hot.....fl.oz. 1

Water of ammonia,

Aromatic elixir, of each.....sufficient

Dissolve the bismuth and ammonium citrate in the hot water, allow the solution to stand until any undissolved matter has subsided; then decant the clear liquid, and add to the residue just enough water of ammonia to dissolve it. Then mix this with the decanted portion and add enough aromatic elixir to make 16 fluidounces; filter, if necessary.

Each fluidram represents 2 gr. of bismuth and ammonium citrate.—N. F.

II.

Bismuth subnitrate.....gr. 180

Nitric acid, C. P.....fl.dr. 8

Tartaric acid,

Sodium bicarbonate, C. P.,

Distilled water, of each.....sufficient

Simple elixir, enough to make.fl.oz. 16

Mix 3 fluidrams of nitric acid with an equal measure of distilled water, and to this add the bismuth subnitrate, stirring until solution is effected; add enough distilled water to make 3 fluidounces. Now dissolve 135 grains of tartaric acid in 12 fluidrams of distilled water, and pour this into the bismuth solution, stirring constantly during mixing. To this mixture gradually add 150 grains of sodium bicarbonate, stirring constantly during mixing. Dilute the magma thus obtained with 5 fluidounces of distilled water, and after the lapse of several hours, pour the whole upon a plain filter; allow the liquid to drain, and wash the precipitate with distilled water until the washings pass tasteless.

Now mix 150 grains of sodium bicarbonate with 1 fluidounce of distilled water, and add 135 grains of tartaric acid gradually, with constant stirring. When reaction has ceased, and a clear solution has formed, add the washed precipitate of bismuth tartrate and stir until it is dissolved. Now add enough

distilled water to make 8 fluidounces and then the elixir. Allow to stand for 24 hours and filter.

The 8 fluidounces of solution to which elixir is added is a solution of tartrate of bismuth and sodium, and may be used to advantage, instead of citrate of bismuth and ammonium, in all preparations containing a soluble compound of bismuth.

Each of the elixirs of bismuth contains about 2 gr. of the respective bismuth salt.

Elixir of Bismuth and Cinchona.

Citrate of bismuth and ammonium.....gr. 128
Distilled water, hot.....fl.dr. 4
Ammonia water.....sufficient
Detannated elixir of cinchona,
N. F., enough to make.....fl.oz. 16

Mix the bismuth salt with the hot water, allow the solution to stand to permit any undissolved matter to subside; decant the clear liquid and add to the residue just enough ammonia water to dissolve. Mix this solution with the decanted liquid, and if alkaline, neutralize the mixture with dilute solution of citric acid gradually added. To the whole add the elixir of cinchona, let stand 24 hours, and filter if necessary.

Each fluidram contains 1 gr. of bismuth salt and represents 1½ gr. of calisaya.

Elixir of Bismuth, Cinchona, Iron and Pepsin.

Citrate of bismuth and ammonium.....gr. 128
Detannated tincture of cinchona.....fl.oz. 2½
Iron pyrophosphate, soluble...gr. 256
Pepsin, pure.....gr. 128
Distilled water, hot.....fl.oz. 1½
Aromatic spirit.....fl.oz. 1
Simple syrup.....fl.oz. 5
Simple elixir, enough to make.fl.oz. 16
Water of ammonia.....sufficient

Add the bismuth salt to 4 fluidrams of the water, triturate well for a moment, allow to stand until the insoluble portion subsides, decant the clear liquid, carefully add to the residue just sufficient ammonia water to dissolve it, carefully avoiding any excess, and mix this solution with the decanted portion.

Add the pepsin to 5 fluidounces of simple elixir and agitate occasionally until dis-

solved; also dissolve the iron salt in the remainder of the water.

Now mix the three liquids, add the tincture, the spirit, syrup, and the remainder of the elixir, allow to stand for 24 hours, and filter.

Each fluidram represents 1 gr. each of citrate of bismuth and ammonium and of pepsin, nearly 2 gr. of cinchona, and 2 gr. of iron pyrophosphate.

Elixir of Bismuth, Cinchona and Iron.

Bismuth and ammonium citrate...gr. 128
Water, hot.....fl.dr. 4
Water of ammonia.....sufficient
Elixir of cinchona and iron,
enough to make.....fl.oz. 16

Dissolve the bismuth and ammonium citrate in the hot water, allow the solution to stand until any undissolved matter has subsided; then decant the clear liquid, and add to the residue enough water of ammonia to dissolve it, carefully avoiding an excess. Then mix the solution with the elixir of cinchona and iron; let the mixture stand 24 hours, if convenient, and filter.

Each fluidram contains 1 gr. of bismuth and ammonium citrate, and nearly 2 gr. of iron phosphate.—N. F.

Elixir of Bismuth, Cinchona, Iron, Pepsin and Strychnine.

Strychnine sulphate.....gr. 1¼
Distilled water.....fl.dr. 4
Elixir of bismuth, cinchona,
iron and pepsin.....fl.oz. 15½

Dissolve the strychnine sulphate in the water, add the elixir, and filter.

Elixir of Bismuth, Cinchona and Pepsin.

Detannated tincture of cinchona.....fl.oz. 2½
Citrate of bismuth and ammonium.....gr. 128
Pepsin, pure.....gr. 128
Distilled water, hot.....fl.dr. 4
Water of ammonia.....sufficient
Aromatic spirit.....fl.oz. 1
Simple syrup.....fl.oz. 4
Simple elixir, enough to make.fl.oz. 16

Triturate the citrate of bismuth and ammonium with the water, allow to stand until the insoluble matter subsides, to the residue add ammonia water until solution takes

place, carefully avoiding any excess, and mix the two liquids. Add the pepsin to 7 fluid-ounces of elixir, agitate occasionally until dissolved; mix this with the preceding liquid, add the tincture, spirit, syrup and remainder of the elixir, allow to stand for 24 hours, and filter.

Each fluidram represents nearly 2 gr. of cinchona and contains 1 gr. each of pepsin, and of citrate of bismuth and ammonium.

Elixir of Bismuth, Cinchona, Iron and Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
Water, hot.....fl.dr. $1\frac{1}{4}$
Elixir of cinchona, iron and
bismuth, enough to make.....fl.oz. 16

Dissolve the strychnine sulphate in the hot water, add the elixir of cinchona, iron and bismuth, and filter, if necessary.—N. F.

Elixir of Bismuth and Gentian.

Citrate of bismuth and ammo-
nium.....gr. 128
Distilled water, hot.....fl.dr. 4
Ammonia water.....sufficient
Elixir of gentian, N. F., enough
to make.....fl.oz. 16

Treat the bismuth salt as described under Elixir of Bismuth and Cinchona, add the elixir of gentian, allow to stand for 24 hours, and filter if necessary.

Each fluidram contains 1 gr. of bismuth salt and represents about 2 gr. of gentian.

Elixir of Bismuth, Gentian and Iron.

Citrate of bismuth and ammo-
nium.....gr. 128
Distilled water, hot.....fl.dr. 4
Ammonia water.....sufficient
Elixir of gentian and iron phos-
phate, enough to make.....fl.oz. 16

Treat the bismuth salt as in the preceding elixir, add the elixir of gentian and iron, let stand 24 hours, and filter if necessary.

Each fluidram contains 1 gr. of bismuth salt and nearly 1 gr. of iron phosphate, and represents about $1\frac{1}{4}$ gr. of gentian.

Elixir of Bismuth, Gentian, Iron and Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
Distilled water.....fl.dr. 4
Elixir of bismuth, gentian and
iron, enough to make.....fl.oz. 16

Dissolve the strychnine in the water, add

the elixir, let stand a few hours and filter.

Each fluidram contains $1\frac{1}{16}$ gr. of strychnine sulphate, nearly 1 gr. bismuth salt and nearly 1 gr. of iron phosphate, and represents about $1\frac{1}{4}$ gr. of gentian.

Elixir of Bismuth, Gentian and Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
Distilled water.....fl.dr. 4
Elixir of bismuth and gentian,
enough to make.....fl.oz. 16

Dissolve the strychnine in the water, add the elixir, let stand a few hours, and filter.

Each fluidram contains $1\frac{1}{16}$ gr. of strychnine sulphate, and nearly 1 gr. of bismuth salt and represents about $1\frac{1}{4}$ gr. of gentian.

Elixir of Bismuth, Golden Seal and Iron.

Glycerite of hydrastis.....fl.oz. 1
Iron pyrophosphate, soluble....gr. 128
Distilled water, hot.....fl.dr. 4
Elixir of bismuth, enough to
make.....fl.oz. 16

Dissolve the iron salt in the water, and the glycerite and elixir, let stand for a day or two, and filter. The elixir must be perfectly neutral.

Each fluidram contains 1 gr. of iron pyrophosphate, and nearly 2 gr. of bismuth salt and represents $3\frac{1}{4}$ gr. of hydrastis.

Elixir of Bismuth and Golden Seal. (Elixir of Bismuth and Hydrastis.)

Glycerite of hydrastis.....fl.oz. 1
Elixir of bismuth.....fl.oz. 15

Mix, let stand for several days if possible, and filter. The elixir of bismuth must be exactly neutral before adding the glycerite.

Each fluidram represents $3\frac{1}{4}$ gr. of hydrastis and contains nearly 2 gr. of citrate of bismuth and ammonium.

Elixir Bismuth and Iron.

Iron pyrophosphate, soluble....gr. 128
Distilled water, hot.....fl.dr. 4
Elixir of bismuth.....fl.oz. 8
Simple elixir, enough to make.....fl.oz. 16

Dissolve the iron salt in water and add the elixirs.

Each fluidram contains 1 gr. each of iron pyrophosphate and bismuth salt.

Elixir of Bismuth, Iron and Pepsin.

Citrate of bismuth and ammonium.....gr. 128
 Iron pyrophosphate.....gr. 128
 Pepsin, pure.....gr. 128
 Distilled water, hot.....fl.oz. 1
 Water of ammonia.....sufficient
 Simple elixir, enough to make.fl.oz. 16

Triturate the bismuth with 4 fluidrams of water, allow the insoluble matter to subside, decant the clear liquid, to the residue add gradually ammonia water until solution occurs, carefully avoiding any excess, and mix this with the decanted portion. Dissolve the iron pyrophosphate in the remainder of the water; also dissolve the pepsin in 12 fluidounces of elixir by frequent agitation. Mix the three liquids, add the remainder of the elixir, and filter.

Each fluidram contains 1 gr. each of iron pyrophosphate, pepsin, and citrate of bismuth and ammonium.

Elixir of Bismuth, Iron, Pepsin and Quinine.

Quinine hydrochlorate.....gr. 32
 Elixir of bismuth, iron and pepsin.....fl.oz. 16

Mix, dissolve by agitation, and filter, if necessary.

Each fluidram contains 1 gr. each of pepsin, iron pyrophosphate and citrate of bismuth and ammonium and $\frac{1}{4}$ gr. of quinine hydrochlorate.

Elixir of Bismuth, Iron and Strychnine.

Iron pyrophosphate, soluble..gr. 128
 Strychnine sulphate.....gr. $1\frac{1}{4}$
 Distilled water.....fl.oz. 1
 Elixir of bismuth.....fl.oz. 8
 Simple elixir, enough to make fl.oz. 16

Dissolve the iron salt and strychnine salt separately in 4 fluidrams of the water; add the two elixirs, and filter if necessary. The elixir of bismuth must be perfectly neutral.

Each fluidram contains $\frac{1}{16}$ gr. of strychnine sulphate and 1 gr. each of iron pyrophosphate and bismuth salt.

Elixir of Bismuth, Nux Vomica and Pepsin.

Tincture of nux vomica....fl.dr. $5\frac{1}{2}$
 Elixir of pepsin and bismuth,
 N. F., enough to make....fl.oz. 16

Each fluidram contains nearly 1 gr. of pepsin and 2 gr. of citrate of bismuth and ammonium and represents about $\frac{1}{4}$ gr. of nux vomica.

Elixir of Bismuth and Pancreatin.

Citrate of bismuth and ammonium.....gr. 128
 Pancreatin, pure.....gr. 128
 Distilled water.....fl.oz. 1
 Water of ammonia.....sufficient
 Tincture of cudbear.....fl.dr. 2
 Simple elixir, enough to make.fl.oz. 16

Triturate the bismuth salt with the water, allow the insoluble portion to subside, decant the clear liquid, add sufficient ammonia water to dissolve the residue, add this solution and the decanted portion to 12 fluidounces of elixir mixed with the tincture, then add the pancreatin, agitate occasionally until the latter is apparently dissolved, filter in a well-covered funnel, and add enough elixir through the filter to make the filtrate measure 16 fluidounces.

Each fluidram contains 1 gr. each of pancreatin and citrate of bismuth and ammonium.

Elixir of Bismuth, Pancreatin and Pepsin.

Refer to "Elixir of Pancreatin" and its combinations.

Elixir of Bismuth and Pepsin.

Pepsin, pure.....gr. 128
 Bismuth and ammonium citrate..gr. 256
 Water of ammonia.....sufficient
 Glycerin.....fl.oz. 2
 Alcohol.....fl.oz. 8
 Simple syrup.....fl.oz. 4
 Compound elixir of taraxacum.fl.oz. 1
 Purified talcum.....gr. 120
 Water, enough to make.....fl.oz. 16

Dissolve the pepsin in 4 fluidounces of water. Dissolve the bismuth and ammonium citrate in 1 fluidounce of warm water, allow the solution to stand until clear, if necessary; then decant the clear liquid, and add to the residue just enough water of ammonia to dissolve it, carefully avoiding an excess. Then mix the two solutions, and add the glycerin, compound elixir of taraxacum and alcohol. Thoroughly incorporate the talcum with the mixture, filter it through a wetted filter, and pass enough water through the

filter to make the filtrate measure 12 fluid-ounces. To this add the syrup.

Each fluidram represents 1 gr. of pepsin and 2 gr. of bismuth and ammonium citrate.—N. F.

Elixir of Bismuth, Pepsin and Quinine.

Quinine hydrochlorate.....gr. 32
Elixir of pepsin and bismuth,
N. F.....fl.oz. 16

Mix and dissolve by agitation.

Each fluidram contains $\frac{1}{4}$ gr. of quinine hydrochlorate, of pepsin, and 2 gr. of citrate of bismuth and ammonium.

Elixir of Bismuth, Pepsin and Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
Elixir of pepsin and bismuth.fl.oz. 16

Dissolve the strychnine sulphate in the elixir by agitation.

Each fluidram represents $1\frac{1}{2}$ gr. of strychnine sulphate, 1 gr. of pepsin, and 2 gr. of bismuth and ammonium citrate.—N. F.

Elixir of Bismuth, Pepsin and Wafer Ash.

Fluid extract of wafer ash....fl.oz. 2
Elixir of pepsin and bismuth,
N. F.....fl.oz. 14

Mix, allow to stand 24 hours, and filter through purified talcum.

Each fluidram represents $7\frac{1}{2}$ gr. of wafer ash, nearly 1 gr. of pepsin and nearly 2 gr. of citrate of bismuth and ammonium.

Elixir of Bismuth and Quinine.

Quinine hydrochlorate.....gr. 32
Elixir of bismuth, enough to
make.....fl.oz. 16

Dissolve the quinine salt in the elixir (which should be neutral) by agitation and filter, if necessary.

Each fluidram contains 1 gr. of quinine hydrochlorate and 2 gr. of bismuth salt.

Elixir of Bismuth and Strychnine.

Strychnine sulphate.....gr. $1\frac{1}{4}$
Distilled water.....fl.dr. 4
Elixir of bismuth.....fl.oz. $15\frac{1}{4}$

Dissolve the alkaloidal salt in the water and add to the elixir, which latter should be neutral.

Each fluidram contains $1\frac{1}{2}$ gr. of strychnine sulphate and nearly 2 gr. of bismuth salt.

Elixir, Bitter. (Elixir Amarum.)

Extract of wormwood.....av. oz. $3\frac{1}{4}$
Oleosaccharate of peppermint.av.oz. $1\frac{1}{4}$
Aromatic tincture, N. F.....fl.oz. $1\frac{1}{4}$
Bitter tincture, N. F.....fl.oz. $1\frac{1}{4}$
Water.....fl.oz. $8\frac{1}{4}$

Triturate the extract and oleosaccharate with the water to a smooth condition and add the other ingredients. This preparation should be cloudy and of a dark brown color.—Germ. Pharm.

Elixir of Blackberry.

Fluid extract of rubus.....fl.oz. 2
Tincture of vanilla.....fl.dr. 4
Compound elixir of taraxacum..fl.oz. 4
Simple elixir, enough to make...fl.oz. 16

Each fluidram represents $7\frac{1}{2}$ gr. of blackberry root bark.

Elixir of Blackberry, Compound.

Blackberry root.....gr. 480
Galls.....gr. 480
Cinnamon, Saigon.....gr. 480
Cloves.....gr. 120
Mace.....gr. 60
Ginger.....gr. 60
Blackberry juice.....fl.oz. 24
Simple syrup.....fl.oz. 12
Glycerin.....fl.oz. 12
Diluted alcohol.....sufficient

Reduce the solids to a moderately coarse powder, moisten it with diluted alcohol, and percolate it with this menstruum in the usual manner, until 16 fluidounces of percolate are obtained. To this add the blackberry juice, syrup and glycerin, and mix thoroughly.—N. F.

Elixir of Black Haw. (Elixir of Viburnum Prunifolium.)

Fluid extract of black haw...fl.oz. 2
Compound tincture of carda-
mom.....fl.dr. $9\frac{1}{4}$
Aromatic elixir, enough to
make.....fl.oz. 16

Mix, allow the mixture to stand a few days, if convenient, and filter.

Elixir of Black Cohosh. (Elixir of Cimicifuga.)

Fluid extract of black cohosh...fl.oz. 4
Alcohol.....fl.oz. 1
Simple elixir.....fl.oz. 11

Mix, let stand 24 hours, and filter through purified talcum.

Each fluidram represents $7\frac{1}{2}$ gr. of cimicifuga.

Elixir of Black Cohosh, Compound.

(Compound Elixir of Cimicifuga.)

Fluid extract of cimicifuga...f.dr.	9½
Fluid extract of wild cherry...f.dr.	8
Fluid extract of sanguinaria...f.dr.	3¼
Fluid extract of licorice...f.dr.	3¼
Simple elixir...f.oz.	18

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluidram represents about 4½ gr. of cimicifuga, 4 gr. of wild cherry, and 1½ gr. each of sanguinaria and licorice.

Each fluidram represents about 7½ gr. of black haw.—N. F.

Elixir of Black Haw, Compound.

(Compound Elixir of Viburnum Prunifolium.)

Fluid extract of black haw...f.oz.	2
Fluid extract of hydrastis...f.oz.	2
Fluid extract of Jamaica dogwood...f.oz.	1
Simple elixir...f.oz.	11

Mix, allow to stand for 24 hours, and filter.

Each fluidram represents 7½ gr. each of black haw and golden seal and 3¼ gr. of Jamaica dogwood.

This is listed in manufacturers' catalogues under the names "Sedative Cordial" and "Sedative Elixir."

Elixir of Blue Flag.

Fluid extract of blue flag...f.oz.	4
Alcohol...f.oz.	1
Simple elixir...f.oz.	11

Mix, allow to stand for 24 hours, and filter.

Each fluidram represents 15 gr. of blue flag.

Elixir of Blue Flag and Wahoo.

Fluid extract of blue flag...f.oz.	2¾
Fluid extract of wahoo...f.oz.	2¾
Alcohol...f.oz.	½
Simple elixir...f.oz.	10

Mix, allow to stand for 24 hours and filter through talcum.

Each fluidram represents about 10 gr. each of blue flag and wahoo.

Elixir of Three (or Triple) Bromides.

Potassium bromide...gr.	128
Sodium bromide...gr.	128
Elixir of caffeine, enough to make...f.oz.	16

Mix, dissolve by agitation, and filter, if necessary.

Each fluidram contains 8 gr. of each of the bromides of potassium, sodium, and caffeine.

Elixir of Six Bromides.

Potassium bromide...gr.	640
Sodium bromide...gr.	640
Ammonium bromide...gr.	384
Calcium bromide...gr.	192
Lithium bromide...gr.	64
Iron bromide...gr.	64
Compound tincture of cudbear...f.dr.	2
Simple elixir, enough to make...f.oz.	16

Dissolve by agitation and filter, if necessary.

Each fluidram contains 5 gr. each of potassium and sodium bromides, 3 gr. of ammonium bromide, 1½ gr. of calcium bromide, and 1 gr. each of lithium and iron bromides.

Elixir of Bromide of Ammonium.

Refer to Elixir of Ammonium Bromide.

Elixir of Bromide of Caffeine.

Refer to Elixir of Caffeine.

Elixir of Bromide of Calcium.

Refer to Elixir of Calcium Bromide.

Elixir of Bromide of Lithium.

Refer to Elixir of Lithium Bromide.

Elixir of Bromide of Potassium.

Potassium bromide...gr.	1280
Citric acid...gr.	30
Aromatic elixir, enough to make...f.oz.	16

Dissolve the potassium bromide and citric acid in the elixir, by agitation, and filter.

Each fluidram contains 10 gr. of potassium bromide.—N. F.

Elixir of Bromide of Sodium.

Sodium bromide...gr.	1280
Citric acid...gr.	30
Aromatic elixir, enough to make...f.oz.	16

Dissolve the sodium bromide and citric acid in the elixir, by agitation, and filter, if necessary.

Each fluidram contains 10 gr. of sodium bromide.—N. F.

Elixir of Bromide of Sodium and Lupulin.

Refer to Elixir of Lupulin and its combinations.

Elixir of Bromide of Zinc.

Zinc bromide.....	gr. 128
Citric acid.....	gr. 3
Simple elixir.....	fl.oz. 16

Dissolve by agitation and filter, if necessary.

Each fluidram contains 1 gr. of zinc bromide.

Elixir of Buchu.

Fluid extract of buchu.....	fl.oz. 2
Alcohol.....	fl.oz. 1
Simple syrup.....	fl.oz. 1
Magnesium carbonate.....	gr. 20
Aromatic elixir, enough to make	fl.oz. 16

Mix the fluid extract of buchu with the alcohol, then add 12 fluidounces of aromatic elixir, and the syrup; incorporate with it the magnesium carbonate, and filter. Finally, pass enough aromatic elixir through the filter to make 16 fluidounces.

Each fluidram represents about $7\frac{1}{4}$ gr. of buchu.—N. F.

Elixir of Buchu, Compound.

Compound fluid extract of buchu.....	fl.oz. 4
Alcohol.....	fl.oz. 1
Simple syrup.....	fl.oz. 1
Magnesium carbonate.....	gr. 120
Aromatic elixir, enough to make	fl.oz. 16

Mix the compound fluid extract of buchu with the alcohol, then add 8 fluidounces of aromatic elixir, and the syrup; incorporate with it the magnesium carbonate, and filter. Finally, pass enough aromatic elixir through the filter to make 16 fluidounces.

Each fluidram represents 15 m. of compound fluid extract of buchu.—N. F.

Elixir of Buchu and Juniper, Compound. (Rheumatic Elixir.)

Fluid extract of buchu.....	fl.dr. $6\frac{1}{4}$
Fluid extract of barberry bark	fl.dr. $3\frac{1}{4}$
Fluid extract of juniper berries	fl.dr. $3\frac{1}{4}$
Sodium salicylate.....	gr. 160
Simple syrup.....	fl.oz. 1
Alcohol.....	fl.oz. 1
Simple elixir enough to make	fl.oz. 16

Mix all, let stand for 24 hours, and filter through purified talcum.

Each fluidram contains $1\frac{1}{4}$ gr. of sodium salicylate, and represents 3 gr. of buchu, and $1\frac{1}{4}$ gr. each of barberry bark and juniper berries.

Elixir of Buchu, Juniper and Potassium Acetate.

Fluid extract of buchu.....	fl.dr. 12
Fluid extract of juniper berries	fl.dr. 4
Potassium acetate.....	gr. 192
Alcohol.....	fl.oz. 1
Simple syrup.....	fl.oz. 1
Simple elixir.....	fl.oz. 12

Mix, allow to stand for 24 hours and filter through talcum.

Each fluidram contains $1\frac{1}{4}$ gr. of potassium acetate, and represents about $5\frac{1}{4}$ gr. of buchu, and 2 gr. of juniper berries.

Elixir of Buchu, Juniper, Uva Ursi and Potassium Acetate.

Fluid extract of buchu.....	fl.oz. 2
Fluid extract of uva ursi.....	fl.dr. 11
Fluid extract of juniper berries	fl.dr. $5\frac{1}{4}$
Potassium acetate.....	av.oz. $1\frac{1}{4}$
Alcohol.....	fl.oz. 1
Simple syrup.....	fl.oz. 1
Simple elixir.. enough to make	fl.oz. 16

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluidram contains 5 gr. of potassium acetate, and represents $7\frac{1}{4}$ gr. of buchu, 5 gr. of uva ursi, and $2\frac{1}{4}$ of juniper berries.

Elixir of Buchu and Pareira.

Fluid extract of buchu.....	fl.oz. 2
Fluid extract of pareira brava..	fl.oz. 2
Alcohol.....	fl.oz. 1
Simple syrup.....	fl.oz. 1
Simple elixir.....	fl.oz. 10

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluidram represents $7\frac{1}{4}$ gr. each of buchu and pareira brava.

Elixir of Buchu and Pareira, Compound.

Fluid extract of buchu.....	fl.dr. 8
Fluid extract of juniper berries	fl.dr. 4
Fluid extract of pareira brava..	fl.dr. 2
Fluid extract of stone-root.....	fl.dr. 2
Alcohol.....	fl.oz. 1
Simple syrup.....	fl.oz. 1
Simple elixir.....	fl.oz. 12

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluidram represents about 4 gr. of buchu, 2 gr. of juniper berries, and 1 gr. each of pareira brava and collinsonia.

Elixir of Buchu and Potassium Acetate.

Potassium acetate.....gr. 640
Elixir of buchu, enough to make fl. oz. 16

Dissolve the potassium acetate in about 12 fluidounces of elixir of buchu, filter, if necessary, and add the remainder of the elixir of buchu.

Each fluidram represents 5 gr. of potassium acetate, and about 7 gr. of buchu.—N. F.

Elixir of Buckthorn. (Elixir of Frangula.)

Fluid extract of frangula.....fl. oz. 4
Alcohol.....fl. oz. 1
Compound elixir of taraxacum..fl. oz. 4
Aromatic elixir.....fl. oz. 7

Mix them, allow the mixture to stand 48 hours, if convenient, and filter.

Each fluidram represents 15 gr. of frangula.—N. F.

Elixir of Buckthorn and Senna.

Fluid extract of frangula.....fl. oz. 2
Elixir of senna.....fl. oz. 14

Each fluidram represents 7½ gr. of buckthorn bark, and 26 gr. of senna.

Elixir of Butyl Chloral Hydrate.

Refer to "Elixir of Croton Chloral Hydrate" for above and its combinations.

Elixir of Caffeine.

Caffeine.....gr. 128
Diluted hydrobromic acid....fl. dr. ½
Syrup of coffee.....fl. oz. 4
Aromatic elixir enough to make fl. oz. 16

Rub the caffeine in a mortar, with the diluted hydrobromic acid and about 2 fluidounces of aromatic elixir, until solution is effected; then add the syrup, and lastly the remainder of the aromatic elixir. Filter, if necessary.

Each fluidram contains 1 gr. of caffeine.—N. F.

Elixir of Calcium Bromide.

Calcium bromide.....gr. 640
Citric acid.....gr. 30
Aromatic elixir, enough to make fl. oz. 16

Dissolve the calcium bromide and the citric acid in about 12 fluidounces of aromatic elixir by agitation, then add the remainder of the aromatic elixir, and filter, if necessary.

Each fluidram contains 5 gr. of calcium bromide.—N. F.

Elixir of Calcium Hypophosphite.

Calcium hypophosphite.....gr. 256
Citric acid.....gr. 30
Aromatic elixir, enough to make fl. oz. 16

Dissolve the calcium hypophosphite in 14 fluidounces of aromatic elixir, and filter; dissolve the citric acid in the filtrate, and pass the remainder of the aromatic elixir through the filter.

Each fluidram contains 2 gr. of calcium hypophosphite.—N. F.

Elixir of Calcium and Sodium Hypophosphites and Cherries.

Refer to "Elixir of Cherries" for this and its combinations.

Elixir of Calcium and Sodium Hypophosphites with Cinchona.

Refer to "Elixir of Cinchona and Hypophosphites."

Elixir of Calcium and Sodium Hypophosphites with Malt.

Calcium hypophosphite.....gr. 128
Sodium hypophosphite.....gr. 128
Adjuvant elixir.....fl. oz. 8
Fluid extract of malt, N. F..fl. oz. 8

Dissolve the salts in the elixir by trituration, filter, and add the malt extract.

Each fluidram contains 1 gr. each of the hypophosphites of calcium and sodium.

Elixir of Calcium and Sodium Hypophosphites with Tar.

Calcium hypophosphite.....gr. 128
Sodium hypophosphite.....gr. 128
Distilled water, hot.....fl. oz. 2
Elixir of tar..enough to make fl. oz. 16

Dissolve the salts in the water, add the elixir, and filter.

Each fluidram contains 1 gr. each of the hypophosphites.

Elixir of Calcium Iodide.

I. Calcium iodide.....av. oz. 1½
Simple elixir..enough to make fl. oz. 16

Dissolve by agitation, and filter.

II. Inasmuch as calcium iodide is an unstable compound, it should be prepared as

needed, and the following formula should therefore receive preference:

Solution of iron iodide, N. F., prepared without hypophos- phorous acid	fl.dr. 18½
Calcium oxide, C. P.	av.oz. 2
Distilled water	sufficient
Sugar	av.oz. 8½
Compound spirit of orange....	fl.dr. 2
Alcohol	fl.oz. 4

Hydrate the calcium oxide with 6 fluid-ounces of water, add the solution of iron oxide, heat to boiling, allow to stand a few minutes, decant the clear liquid, add to the residue a fresh portion of distilled water, heat again to boiling, decant as before, and repeat the process again until the mixed decantates measure 10 fluidounces; add the alcohol containing the spirit, let stand for an hour or more, filter, in the filtrate dissolve the sugar by agitation, and strain if necessary.

Each fluidram contains 5 gr. of calcium iodide.

Elixir of Iodo-Bromide of Calcium, Compound. (Compound Elixir of Calcium Bromide with Iodides.)

Calcium bromide	gr. 256
Sodium iodide	gr. 256
Potassium iodide	gr. 256
Magnesium chloride	gr. 256
Compound fluid extract of sar- saparilla	fl.oz. 2
Compound fluid extract of stil- lingia	fl.oz. 2
Aromatic elixir	fl.oz. 4
Sugar	av.oz. 4½
Water	enough to make fl.oz. 16

Dissolve the salts in the water, add the sugar, and to this syrup add the fluid extracts previously mixed with the aromatic elixir; after standing for 2 days, filter and add the remainder of the water.

Elixir of Calcium Lactophosphate.

Calcium lactate	gr. 128
Phosphoric acid (85 per cent.)	fl.dr. 1
Water	fl.oz. 1
Simple syrup	fl.oz. 1
Aromatic elixir, enough to make	fl.oz. 16

Triturate the calcium lactate with the phosphoric acid, water and syrup, until the salt is dissolved, then add the remainder of the aromatic elixir, and filter.

Each fluidram represents 1 gr. of calcium lactate, or about 1½ gr. of so-called calcium lactophosphate.—N. F.

Elixir of Calcium Lactophosphate and Cinchona.

Detannated elixir of cinchona...	fl.oz. 8
Elixir of calcium lactophosphate	fl.oz. 8

Elixir of Calcium Lactophosphate, Cinchona and Iron.

Calcium lactate	gr. 64
Phosphoric acid (85 per cent.)	fl.dr. ½
Water of ammonia	fl.dr. 4
Citric acid	gr. 120
Elixir of cinchona and iron, enough to make	fl.oz. 16

Dissolve the calcium lactate in 7 fluid-ounces of elixir of cinchona and iron, with the aid of the phosphoric acid; then add the citric acid, and when this is dissolved, the water of ammonia; finally, add the remainder of the elixir of cinchona and iron, and filter.

Each fluidram contains ½ gr. of calcium lactate (or about ¾ gr. of so-called calcium lactophosphate,) and nearly 2 gr. of iron phosphate.—N. F.

Elixir of Calcium Phosphate.

Calcium phosphate	gr. 640
Hydrochloric acid, concentra- ted	fl.dr. 5
Water	fl.oz. 1
Tincture of cudbear	fl.dr. 2
Simple elixir, enough to make	fl.oz. 16

Mix the calcium phosphate with the water, add the acid, dissolve, add the elixir, and then the tincture.

Each fluidram contains 5 gr. of calcium phosphate.

Elixirs of Calisaya.

Elixir of calisaya, and its various combina-
tions, will be referred to under the head of
"Elixir of Cinchona."

Elixir of Cascara Sagrada.

I.

Fluid extract of cascara sagrada	fl.oz. 4
Compound elixir of taraxacum	fl.oz. 12

Mix them, allow the mixture to stand a few days, if convenient, and filter.

Each fluidram represents 15 gr. of cascara sagrada.—N. F.

II.

Tincture of orange peel	fl.oz. 1½
Alcohol	fl.dr. 6
Cinnamon water	fl.oz. 2½
Simple syrup	fl.oz. 4½
Fluid extract of cascara sagrada, of the Brit. pharm.	fl.oz. 6½

—Brit. Form.

Elixir of Cascara Sagrada, Compound.

(Laxative Elixir.)

Fluid extract of cascara sagrada	f.oz. 2
Fluid extract of senna	f.dr. 10
Fluid extract of butternut	f.oz. 1
Compound elixir of taraxacum, enough to make	f.oz. 16

Mix them, allow to stand a few days, if convenient, and filter.—N. F.

Elixir of Cascara Sagrada with Sodium Salicylate.

Elixir of cascara sagrada	f.oz. 5
Sodium salicylate	av.oz. 2½
Simple elixir, enough to make	f.oz. 16

Mix, dissolve by shaking, and filter if necessary.

Each fluidram represents approximately 2 gr. cascara sagrada, and contains very nearly 1 gr. of sodium salicylate.

Elixir, Castillon's.

Cinchona, coarsely powdered	gr. 160
Gentian, coarsely powdered	gr. 160
Ipecac, coarsely powdered	gr. 80
Columbo, coarsely powdered	gr. 80
Cinnamon, coarsely powdered	gr. 20
Aqueous extract of opium	gr. 20
Diluted alcohol	sufficient

Macerate the drugs with 16 fluidounces of diluted alcohol for 7 days, and filter, adding enough menstruum through the filter to make up 16 fluidounces of filtrate.

Elixir, Cathartic, Compound.

Fluid extract of senna	f.oz. 2
Fluid extract of podophyllum	f.oz. 1
Fluid extract of leptandra	f.dr. 6
Fluid extract of jalap	f.dr. 6
Rochelle salt	av.oz. 2¼
Sodium bicarbonate	gr. 120
Compound elixir of taraxacum	f.oz. 4
Elixir of licorice, enough to make	f.oz. 16

Mix the fluid extracts with the compound elixir of taraxacum; in the mixture, dissolve the salts by agitation, and add the elixir of licorice.

The product should not be filtered, and should be shaken up whenever any of it is dispensed.—N. F.

Compound elixir of cascara sagrada, N. F., is also known as "laxative elixir," or "elixir purgans," and may be used as a cathartic elixir instead of the above.

Elixir of Celery, Compound.

Fluid extract of celery seed	f.oz. 1
Fluid extract of coca	f.oz. 1
Fluid extract of kola	f.oz. 1
Fluid extract of black haw	f.oz. 1
Alcohol	f.oz. 2
Aromatic elixir, enough to make	f.oz. 16

Mix the alcohol with 4 fluidounces of aromatic elixir; to this add the fluid extract of celery in several portions, shaking after each addition, and afterwards the other fluid extracts; finally, add the remainder of the elixir, allow the mixture to stand 24 hours, and filter.—N. F.

Elixir of Celery and Guarana.

Fluid extract of celery seed	f.oz. 2
Fluid extract of guarana	f.oz. 2
Aromatic elixir	f.oz. 12

Mix, allow to stand for 24 hours, and filter through talcum.

Each fluidram represents 7½ gr. each of celery and guarana.

Elixir of Cherries. (Elixir Cerasorum.)

Ripe, sour cherries, free from stems	av. oz. 8
Alcohol	f.oz. 2
Glycerin	f.oz. 1
Simple syrup	sufficient

Crush the cherries and stones to a pulp, add the alcohol and glycerin, macerate for 7 days, press and filter, and to the filtrate add simple syrup enough to make 16 fluidounces.

Elixir of Cherries with Calcium and Sodium Hypophosphites.

Calcium hypophosphite	gr. 128
Sodium hypophosphite	gr. 128
Elixir of cherries, enough to make	f.oz. 16

Triturate the two salts to fine powder, add to the elixir, dissolve by agitation, and filter.

Each fluidram contains 1 gr. each of sodium and calcium hypophosphites.

Elixir of Chloral Hydrate.

Chloral hydrate, crystal	gr. 640
Simple elixir, enough to make	f.oz. 16

Mix, dissolve by agitation, and filter, if necessary.

Each fluidram contains 5 gr. of chloral hydrate.

Elixir of Chirata.

Tincture of chirata.....fl.oz. 4
Simple elixir.....fl.oz. 12
Each fluidram represents 1½ gr. of chirata.

Elixir of Chloral Hydrate and Ammonium Valerianate.

Refer to "Elixir of Ammonium Valerianate" and its combinations.

Elixir of Chlorides of Arsenic and Iron. (Elixir of Two Chlorides.)

Solution of arsenious acid.....fl.dr. 10½
Tincture of citrochloride of iron fl.dr. 5¼
Simple elixir.....fl.oz. 14

Each fluidram contains ½ gr. of arsenious acid (as so-called "chloride of arsenic") and about ¼ gr. of iron chloride.

Elixir of Chlorides of Arsenic, Iron and Mercury. (Elixir of Three Chlorides.)

Solution of protochloride of iron, N. F.....m. 48
Mercuric chloride.....gr. 1
Solution of arsenious acid.....m. 50
Compound elixir of quinine, N. F., enough to make.....fl.oz. 16

Mix, dissolve, and filter.

Each fluidram contains ⅓ gr. of iron protochloride, ⅓ gr. of mercuric chloride and ⅓ gr. of arsenious acid (as so-called "chloride of arsenic").

Elixir of Four Chlorides. (Four Chlorides.)

Mercuric chloride.....gr. 2
Solution of arsenic.....fl.dr. 5½
Tincture of ferric chloride.....fl.oz. 2
Hydrochloric acid, diluted.....fl.dr. 11
Syrup of ginger.....fl.oz. 4
Water, enough to make.....fl.oz. 16

Mix, dissolve and filter, if necessary.

Each fluidram contains about ½ gr. of arsenious acid (as so-called "chloride of arsenic"), ½ gr. of mercuric chloride, about ¼ gr. of ferric chloride, and about 5 minims of diluted hydrochloric acid.

Elixir of Chloroform.

Chloroform.....fl.dr. 4
Alcohol.....fl.oz. 2
Simple elixir, enough to make.....fl.oz. 16

Mix the alcohol and chloroform, and add the elixir.

Each fluidram contains very nearly 2 minims of chloroform.

Elixir of Chloroform, Compound.

(Chloroform Paregoric.)

Chloroform.....fl.oz. 3
Tincture of opium.....fl.oz. 3
Spirit of camphor.....fl.oz. 3
Aromatic spirit of ammonia.....fl.oz. 3
Alcohol.....fl.oz. 8¼
Oil of cassia.....m. 40

Mix the chloroform with the alcohol, then add the oil, aromatic spirit of ammonia, spirit of camphor and tincture of opium. Allow the mixture to stand a few hours, and filter in a well-covered funnel.

Each fluidram represents about 1 gr. of opium and 11 minims of chloroform.—N. F.

Elixir of Cinchona.

Tincture of cinchona.....fl.oz. 2½
Simple syrup.....fl.oz. 2
Glycerin.....fl.oz. 2
Aromatic elixir.....fl.oz. 9½

Mix the liquids, allow to stand as long as convenient, and filter through a wetted filter.

Each fluidounce represents about 14 gr. of yellow cinchona.—N. F.

The compound elixir of quinine, N. F., is sometimes dispensed as elixir of cinchona or calisaya.

Elixir of Cinchona, Detannated.

I.

Detannated tincture of cinchona fl.oz. 2½
Simple syrup.....fl.oz. 2
Glycerin.....fl.oz. 2
Aromatic elixir.....fl.oz. 9½

Mix the liquids, and filter, if necessary.

Each fluidounce represents about 14 gr. of yellow cinchona.—N. F.

II. Compound elixir of quinine is often used as a detannated elixir of calisaya and is recommended to be used even by some of the best pharmacists, who see no advantage in employing a tedious process of detannation, when simple solution will yield practically the same results.

III.

Yellow cinchona.....gr. 240
Curacao orange peel.....gr. 160
Coriander.....gr. 40
Cardamom.....gr. 15
Cinnamon.....gr. 80
Anise.....gr. 10
Cacao (Baker's).....gr. 80
Purified talcum.....gr. 120
Alcohol,
Water.....of each, sufficient
Spirit of orange.....fl.dr. 1½
Sugar.....av.oz. 5

Reduce the cinchona, orange peel, spices, and cacao together to a moderately fine powder, extract by slow percolation with a menstruum, consisting of 1 part, by measure, of alcohol, and 3 parts of water, so as to obtain 8 fluidounces of percolate.

Prepare hydrate of iron as directed under "Elixir of Gentian," and detannate the above percolate as there directed, washing the residue, with a mixture similar to the menstruum used, until the liquid measures 12 fluidounces. To the latter add the spirit of orange and the talcum, shake well, filter, washing the filter with the same liquid that was used before until the filtrate measures 12½ fluidounces. To the filtrate add the sugar, and dissolve by agitation; strain, or filter, if this be necessary.

IV.

Yellow cinchona, in fine powder. gr. 480
Quicklime. gr. 360

Slake the lime in the least quantity of water, mix intimately with the bark, moisten with alcohol, pack in a glass percolator, and percolate slowly with alcohol as a menstruum in the usual manner until 8 fluidounces are obtained. The first portions of the percolate must be tested with solution of ferric chloride; so long as this liquid affords a discoloration it must be returned to the percolator.

Prepare flavoring as follows:

Oil of orange peel. fl.dr. 2
Oil of caraway. fl.dr. 1
Oil of cassia. fl.dr. 1
Oil of anise. fl.dr. ½
Alcohol. fl.oz. 1

Triturate one fluidounce of this mixture with 60 gr. of purified talcum, 3 fluidrams of alcohol and 1 fluidounce of water, and filter.

To 12 fluidounces of simple syrup add 5 gr. of citric acid and mix this with the tincture first obtained, subsequently adding 11½ fluidounces of water. Then to this add the flavoring mixture, mix well, and filter the whole.

V.

Yellow cinchona. gr. 480
Saigon cassia. gr. 80
Coriander. gr. 80
Nutmeg. gr. 20
Star anise. gr. 20
Sugar. av.oz. 10
Alcohol,
Water, of each. sufficient
Spirit of orange. fl.dr. 2
Purified talcum. gr. 120

Reduce the cinchona, cassia, coriander, nutmeg and anise to a moderately fine powder, and extract by percolation with a mixture of alcohol and water, in the proportion of 1 by measure of the former to 3 of the latter, until 22 fluidounces of percolate are obtained. Now beat the white of 1 egg with a portion of the percolate, add the remainder of the percolate, and set aside for 24 hours, agitating occasionally. Test at the end of the specified period of time with solution of ferric chloride and if discoloration occurs, the white of another egg may be added as before, allowing to stand 24 hours, then filtering. Wash the filter with a liquid similar to the menstruum used until 25 fluidounces of filtrate are obtained. To this add the spirit of orange and purified talcum, filter; to the filtrate add the sugar, dissolve by agitation and strain, or filter, if necessary.

Each fluidram represents about 1¾ gr. of cinchona.

Elixir of Cinchona, Compound. (Elixir of Cinchona and Coca.)

Fluid extract of cinchona. fl.dr. 10
Fluid extract of coca. fl.dr. 10
Tincture of cacao. fl.oz. 2½
Simple elixir. fl.oz. 11
Mix, and filter, if necessary.

Each fluidram represents about 4½ gr. each of cinchona and coca.

Elixir of Cinchona and Beef.

Elixir of Cinchona, Beef and Iron.

Elixir of Cinchona, Beef, Iron and Strychnine.

Refer for above to Elixir of Beef and its combinations.

Elixir of Cinchona and Bismuth.

Elixir of Cinchona, Bismuth and Iron.

Elixir of Cinchona, Bismuth, Iron and Pepsin.

Elixir of Cinchona, Bismuth, Iron, Pepsin and Strychnine.

Elixir of Cinchona, Bismuth, Iron and Strychnine.

Elixir of Cinchona, Bismuth and Pepsin.

Refer for above to Elixir of Bismuth and its combinations.

Elixir of Cinchona and Calcium Lactophosphate.

Elixir of Cinchona, Calcium Lactophosphate and Iron.

Refer for above Elixir of Calcium Lactophosphate and its combinations.

Elixir of Cinchona and Gentian.

Extract of gentian.....	gr. 70
Tincture of vanilla.....	fl.dr. 2
Simple syrup.....	fl.oz. 1
Aromatic spirit.....	fl.dr. 3
Elixir of cinchona, enough to make.....	fl.oz. 16

Dissolve the extract in about 8 fluidounces of elixir, add the tincture, spirit and syrup, and the remainder of the elixir of cinchona, and filter the whole.

Each fluidram represents about 2 gr. of gentian and about 1½ gr. of cinchona.

Elixir of Cinchona, Gentian and Iron Malate.

Malate of iron ("scales").....	gr. 128
Extract of gentian.....	gr. 35
Simple syrup.....	fl.oz. 4
Elixir of cinchona.....	fl.oz. 6
Tincture of vanilla.....	fl.dr. 2
Oil of cinnamon.....	drop. 1
Water, hot.....	fl.oz. 1
Aromatic elixir, enough to make.....	fl.oz. 16

Dissolve the iron salt and extract in the water, add the other ingredients and filter.

Each fluidram represents about 1 gr. of gentian and ½ gr. of cinchona, and contains 1 gr. of iron malate.

The malate of iron to be used should not be the ferrated extract of apples, but the pure malate of iron which appears in the scale form.

Elixir of Cinchona and Hypophosphites.

Calcium hypophosphite.....	gr. 128
Sodium hypophosphite.....	gr. 128
Citric acid.....	gr. 30
Water.....	fl.oz. 2
Elixir of cinchona, enough to make.....	fl.oz. 16

Dissolve the hypophosphites and citric acid in the water, add the elixir of cinchona, and filter.

Each fluidram contains 1 gr. each of the hypophosphites of calcium and sodium.—N. F.

Elixir of Cinchona and Iron. (Ferrated Elixir of Cinchona.)

Iron phosphate, soluble.....	gr. 256
Water, boiling.....	fl.oz. 1
Compound elixir of quinine.....	fl.oz. 15

Dissolve the iron phosphate in the water, add the compound elixir of quinine, and filter.

Each fluidram contains 2 gr. of iron phosphate.—N. F.

Elixir of Cinchona and "Protoxide" of Iron.

Solution of "protoxide" of iron.....	fl.oz. 1½
Glycerin.....	fl.oz. 1½
Elixir of cinchona, N. F.....	fl.oz. 18

Mix the solution and the glycerin, and add the elixir.

Elixir of Cinchona, Iron and Pepsin.

Pepsin, pure.....	gr. 128
Hydrochloric acid.....	fl.dr. ½
Water.....	fl.oz. 3
Elixir of cinchona and iron, enough to make.....	fl.oz. 16

Dissolve the pepsin in the water mixed with the hydrochloric acid, add the elixir of cinchona and iron; let the mixture stand a few days, if convenient, and filter.

Each fluidram represents 1 gr. of pepsin and about 1½ gr. of iron phosphate.—N. F.

Elixir of Cinchona, Iron and Phosphorus.

Spirit of phosphorus.....	fl.dr. 7½
Elixir of cinchona and iron, enough to make.....	fl.oz. 16

Each fluidram contains 1½ gr. of phosphorus, 2 gr. of iron phosphate, and represents nearly 2 gr. of cinchona.

Elixir of Cinchona, Iron and Strychnine.

Strychnine sulphate.....	gr. 1¼
Distilled water.....	fl.dr. 2
Elixir of cinchona and iron, enough to make.....	fl.oz. 16

Dissolve the strychnine sulphate in the water and add the elixir.

Each fluidram contains 1½ gr. of strychnine sulphate, and about 2 gr. of iron phosphate.—N. F.

Elixir of Cinchona and Pepsin.

- I.
 Quinine sulphate.....gr. 16
 Cinchonine sulphate.....gr. 8
 Elixir of pepsin.....fl.oz. 16
 Dissolve the alkaloidal salts in the elixir and filter if necessary.

- II.
 Pure pepsin.....gr. 128
 Hydrochloric acid.....fl.dr. $\frac{1}{2}$
 Detannated elixir of cinchona, enough to make.....fl.oz. 16
 Dissolve by agitation and filter, using purified talcum, if necessary.

Elixir of Cinchona, Pepsin and Strychnine.

- Quinine sulphate.....gr. 16
 Cinchonine sulphate.....gr. 8
 Strychnine sulphate.....gr. $1\frac{1}{4}$
 Elixir of pepsin, enough to make fl.oz. 16
 Dissolve the alkaloidal salts in the elixir, and filter, if necessary.
 Each fluidram represents small quantities of cinchona alkaloids, $\frac{1}{16}$ gr. of strychnine sulphate, and 1 gr. of pepsin.—N. F.

Elixir of Cinchona with Phosphates.

- I.
 Syrup of calcium lactophosphate, U. S. P.....fl.oz. 4
 Syrup of iron lactophosphate.....fl.oz. 2
 Diluted phosphoric acid.....fl.oz. 1
 Quinine sulphate.....gr. 32
 Alcohol.....fl.oz. 4
 Spirit of orange.....fl.dr. 4
 Water.....fl.oz. $4\frac{1}{2}$

Dissolve the quinine salt in the alcohol previously mixed with the acid and spirit, pour this solution into the syrups previously mixed with the water, allow to stand for 2 days, and filter.

- II.
 Elixir of cinchona.....fl.oz. 8
 Compound syrup of phosphate.....fl.oz. 8

III. The Elixir of Cinchona, Iron and Calcium Lactophosphate, N. F., may be dispensed under the above title.

Elixir of Cinchona and Strychnine.

- Strychnine sulphate.....gr. $1\frac{1}{4}$
 Detannated elixir of cinchona.....fl.oz. 16
 Dissolve by agitation.
 Each fluidram contains $\frac{1}{16}$ gr. of strychnine sulphate, and represents nearly 2 gr. of cinchona.

Elixir of Cinchonidine.

- Cinchonidine sulphate.....gr. 128
 Simple elixir.....fl.oz. 16
 Dissolve by agitation, and filter, if necessary.
 Each fluidram contains 1 gr. of cinchonidine sulphate.

Elixir of Cinchonidine and Ammonium Valerianate.**Elixir of Cinchonidine, Ammonium Valerianate and Iron Pyrophosphate.****Elixir of Cinchonidine, Ammonium Valerianate, Iron Pyrophosphate and Quinine.****Elixir of Cinchonidine, Ammonium Valerianate, Iron Pyrophosphate and Strychnine.****Elixir of Cinchonidine, Ammonium Valerianate and Quinine.****Elixir of Cinchonidine, Ammonium Valerianate, Quinine and Strychnine.****Elixir of Cinchonidine, Ammonium Valerianate and Strychnine.**

Refer for above to Elixir of Ammonium Valerianate and its combinations.

Elixir of Cinchonidine and Iron.

- Iron pyrophosphate, soluble.....gr. 256
 Cinchonidine sulphate.....gr. 128
 Distilled water, hot.....fl.dr. 6
 Simple elixir.....fl.oz. 15
 Dissolve the iron pyrophosphate in the water, and the cinchonidine in the elixir; mix the two solutions and filter if necessary.

Each fluidram contains 1 gr. of cinchonidine sulphate and 2 gr. of iron pyrophosphate.

Elixir of Cinchonidine, Iron and Strychnine.

Make this either by adding $1\frac{1}{4}$ gr. of strychnine sulphate to the preceding, or the elixir of iron phosphate, cinchonidine and strychnine may be employed.

Elixir of Coca.

- Fluid extract of coca.....fl.oz. 2
 Alcohol.....fl.oz. 1
 Simple syrup.....fl.oz. 2
 Tincture of vanilla.....fl.dr. 2
 Purified talcum.....gr. 120
 Aromatic elixir, enough to make fl.oz. 16
 Mix the fluid extract with the alcohol, syrup and 10 fluidounces of aromatic elixir,

add the purified talcum and incorporate the latter thoroughly. Let the mixture stand during 48 hours, if convenient, shaking occasionally; then filter, add the tincture of vanilla to the filtrate, and pass the remainder of the elixir through the filter.

Each fluidram represents $7\frac{1}{2}$ gr. of coca.—N. F.

Elixir of Coca, Beef and Iron.

Refer for above to Elixir of Beef and its combinations.

Elixir of Coca and Cinchona.

Refer to Compound Elixir of Cinchona.

Elixir of Coca and Guarana. (Compound Elixir of Coca.)

Fluid extract of coca.....fl.oz. 2
Fluid extract of guarana.....fl.oz. 2
Purified talcum.....gr. 120
Compound elixir of taraxacum.fl.oz. 12

Mix the liquids, and thoroughly incorporate the purified talcum with the mixture; let it stand during 48 hours, if convenient, occasionally agitating, then filter.

Each fluidram represents $7\frac{1}{2}$ gr. each of coca and guarana.—N. F.

Elixir of Coca and Phosphorus.

Spirit of phosphorus.....fl.dr. 15
Elixir of coca, enough to make.fl.oz. 16

Mix and filter if necessary.

Each fluidram contains $\frac{1}{16}$ gr. of phosphorus and represents $6\frac{1}{2}$ gr. of coca.

Elixir of Codeine.

Codeine sulphate.....gr. 16
Simple elixir.....fl.oz. 16

Dissolve by agitation.

Each fluidram contains $\frac{1}{8}$ gr. of codeine sulphate.

Elixir of Corydalis, Compound. (Alternative Elixir.)

Fluid extract of corydalis.....fl.oz. 1
Fluid extract of stillingia.....fl.oz. 1
Fluid extract of prickly ash bark fl.dr. 4
Fluid extract of blue flag.....fl.oz. $1\frac{1}{2}$
Alcohol.....fl.oz. 2
Potassium iodide.....gr. 384
Aromatic elixir, enough to make fl.oz. 16

Mix the alcohol with the fluid extracts, dissolve the potassium iodide in the mixture, and add the aromatic elixir. Let the mixture stand a few days, if convenient, and filter.

Each fluidram contains 8 gr. of potassium

iodide, and small quantities of the several fluid extracts.

Elixir of Codeine and Terpin Hydrate.

Codeine sulphate.....gr. 16
Terpin hydrate.....gr. 256
Simple elixir, enough to make.fl.oz. 16

Dissolve by agitation and filter if necessary.

Each fluidram contains $\frac{1}{8}$ gr. of codeine sulphate, and 2 gr. of terpin hydrate.

Elixir of Crampbark, Compound. (Compound Elixir of Viburnum Opulus.)

Fluid extract of crampbark.....fl.dr. 10
Fluid extract of trillium.....fl.oz. $2\frac{1}{2}$
Fluid extract of aletris.....fl.dr. 10
Compound elixir of taraxacum..fl.oz. 11

Mix, allow to stand a few days, if convenient, and filter.—N. F.

Elixir of Croton Chloral Hydrate.

(Elixir of Butyl Chloral Hydrate.)

Croton chloral hydrate.....gr. 256
Alcohol.....fl.oz. 1
Tincture of cacao.....fl.oz. 2
Simple elixir, enough to make.fl.oz. 16

Dissolve the croton chloral in the alcohol, add the tincture and elixir, and filter, if necessary.

Each fluidram contains 2 gr. of croton chloral hydrate.

Elixir of Croton Chloral Hydrate and Quinine.

Quinine sulphate.....gr. 128
Elixir of croton chloral hydrate.fl.oz. 16

Reduce the quinine salt to fine powder, add the elixir, dissolve by agitation, and filter, if necessary.

Each fluidram contains 1 gr. of quinine sulphate and 2 gr. of croton chloral hydrate.

Elixir of Curacao. (Curacao Cordial.)

Spirit of curacao.....fl.dr. 2
Orris root, fine powder.....gr. 80
Deodorized alcohol.....fl.oz. 4
Citric acid.....gr. 50
Simple syrup.....fl.oz. 8
Magnesium carbonate.....gr. 120
Distilled water, enough to make fl.oz. 16

Mix the spirit of curacao with the alcohol, add the orris root, magnesium carbonate, and 3 fluidounces of water. Allow the mixture to stand 12 hours, occasionally agitating; then pour it on a wetted filter, returning the

first portions of the filtrate until it runs through clear, and pass enough water through the filter to make the filtrate measure 8 fluidounces. In this dissolve the citric acid, and finally add the syrup.—N. F.

Elixir of Damiana. (Elixir of Turnera.)

Fluid extract of damiana.....	f.oz. 2½
Magnesium carbonate.....	gr. 240
Alcohol.....	f.oz. 4
Glycerin.....	f.oz. 1
Aromatic elixir, enough to make.....	f.oz. 16

Mix the fluid extract with the alcohol, glycerin and 8 fluidounces of aromatic elixir. Incorporate the magnesium carbonate thoroughly with the mixture by trituration, then filter through a wetted filter, and pass the remainder of the aromatic elixir through the filter.

Each fluidram represents nearly 10 gr. of damiana.—N. F.

Elixir of Damiana, Iron, Nux Vomica and Phosphorus.

Fluid extract of damiana.....	f.oz. 2
Tincture of nux vomica.....	f.dr. 10½
Iron pyrophosphate, soluble.....	gr. 128
Elixir of phosphorus.....	f.oz. 4
Alcohol.....	f.oz. 2
Distilled water, hot.....	f.dr. 4
Simple elixir, enough to make.....	f.oz. 16

Mix the fluid extract, tincture, elixir of phosphorus, alcohol, and 6 fluidounces of simple elixir, also dissolve the iron salt in the water, mix the two liquids, add the remainder of the simple elixir, and filter, if necessary, in a well-covered funnel.

Each fluidram represents 7½ gr. of damiana and about 1 gr. of nux vomica, and contains ⅙ gr. of phosphorus and 1 gr. of iron pyrophosphate.

Elixir of Damiana, Iron and Phosphorus.

Fluid extract of damiana.....	f.oz. 2
Elixir of phosphorus.....	f.oz. 4
Iron pyrophosphate, soluble.....	gr. 128
Alcohol.....	f.oz. 1
Distilled water, hot.....	f.dr. 4
Simple elixir, enough to make.....	f.oz. 16

Mix the fluid extract, elixir of phosphorus, alcohol, and 8 fluidounces of simple elixir, dissolve the iron pyrophosphate in the water, mix the two liquids, add the remainder of the elixir, and filter, if necessary, in a well-covered funnel.

Each fluidram contains ⅙ gr. of phos-

phorus and 1 gr. of iron pyrophosphate and represents 7½ gr. of damiana.

Elixir of Damiana, Nux Vomica and Phosphorus.

Fluid extract of damiana.....	f.oz. 2
Tincture of nux vomica.....	f.dr. 10½
Elixir of phosphorus.....	f.oz. 2
Alcohol.....	f.oz. 2
Simple elixir, enough to make.....	f.oz. 16

Mix the above ingredients in the order given and filter, if necessary, in a well-covered funnel.

Each fluidram represents ⅙ gr. of phosphorus, about 1 gr. of nux vomica, and 7½ gr. of damiana.

Elixir of Damiana and Phosphorus.

Elixir of phosphorus.....	f.oz. 8
Fluid extract of damiana.....	f.oz. 2
Alcohol.....	f.oz. 2
Simple elixir.....	f.oz. 4

Mix the elixir of phosphorus, alcohol, and fluid extract and add the simple elixir.

Each fluidram represents ⅙ gr. of phosphorus and 7½ gr. of damiana.

Elixir of Damiana, Phosphorus and Strychnine.

Elixir of phosphorus.....	f.oz. 8
Fluid extract of damiana.....	f.oz. 2
Alcohol.....	f.oz. 2
Strychnine sulphate.....	gr. 1½
Simple elixir.....	f.oz. 4

Mix the elixir of phosphorus, alcohol, and fluid extract and add the simple elixir, having first dissolved the alkaloidal salt in the latter.

Each fluidram represents 7½ gr. of damiana and contains ⅙ gr. each of phosphorus and strychnine sulphate.

Elixir of Dewberry Root, Compound.

Dewberry root, in coarse powder.....	av.oz. 2½
Galls, powdered.....	gr. 120
Kino, powdered.....	gr. 120
Cinnamon, powdered.....	gr. 60
Cloves, powdered.....	gr. 80
Capsicum, powdered.....	gr. 5
Tincture of opium.....	f.dr. 4
Spirit of peppermint.....	m. 45
Brandy.....	f.oz. 16
Sugar.....	av.oz. 7½

Macerate all of the above, sugar excepted, for 14 days, shaking occasionally; express, filter, and in the filtrate dissolve the sugar.

Elixir of Dandelion.

Fluid extract of dandelion.....fl.oz. 6
Simple elixir, enough to make..fl.oz. 16

Each fluidram represents 22½ gr. of dandelion.

Elixir of Dandelion, Compound. (Compound Elixir of Taraxacum.)

I.
Fluid extract of dandelion.....fl.dr. 4
Fluid extract of sweet orange peel fl.dr. 2½
Fluid extract of wild cherry.....fl.dr. 2½
Fluid extract of licorice root...fl.oz. 1
Tincture of cinnamon.....fl.dr. 4
Compound tincture of cardamom fl.dr. 4
Aromatic elixir, enough to make.fl.oz. 16

Mix, let stand a few days, and filter.—N.

F. (last edition).

II.

Dandelion.....gr. 320
Wild cherry.....gr. 320
Sweet orange peel, recently dried.gr. 320
Licorice, Russian, peeled.....av.oz. 2½
Cinnamon, Saigon.....gr. 80
Cardamom.....gr. 80
Canada snake root.....gr. 80
Caraway.....gr. 80
Cloves.....gr. 27
Simple syrup.....fl.oz. 21
Alcohol,
Water, of each.....sufficient.

Mix the drugs, reduce them to a moderately coarse powder, and extract by percolation with a mixture of 1 volume of alcohol and 2 of water, so as to obtain 11 fluidounces of percolate; to this add the syrup; let stand a few days, if possible, and filter.—N. F. (1st edition).

III. A formula for a preparation of the same name, which is also much in use and which is much different in some respects from either of the preceding, is the following:

Fluid extract of dandelion.....fl.dr. 5
Fluid extract of wild cherry....fl.dr. 3
Fluid extract of gentian.....fl.dr. 1
Fluid extract of licorice root...fl.dr. 1
Simple elixir, enough to make..fl.oz. 16

Mix and filter.

Elixir, Digestive, Compound.

See Compound Elixir of Pepsin.

Elixir, Emmenagogue.

Rue.....gr. 96
Spanish saffron.....gr. 96
Savin.....gr. 96
Socotrine aloes.....gr. 192
Adjuvant elixir, enough to make fl.oz. 16

Reduce the drugs to moderately fine pow-

der, mix with 12 fluidounces of adjuvant elixir, macerate for 7 days, agitating occasionally, filter, and through the filter add the remainder of the elixir.

Each fluidram represents ¾ gr. each of rue, saffron and savin, and 1½ gr. of aloes.

Elixir of Eucalyptus.

Fluid extract of eucalyptus...fl.oz. 2
Alcohol.....fl.oz. 2
Magnesium carbonate.....gr. 120
Syrup of coffee.....fl.oz. 6
Compound elixir of taraxacum.fl.oz. 6

Mix the fluid extract with the alcohol, then add the other ingredients, shake the mixture occasionally during 48 hours, and filter.

Each fluidram represents 7½ gr. of eucalyptus.—N. F.

This preparation is also the same as what is generally sold or dispensed as aromatic or compound elixir of eucalyptus.

Elixir Flavoring No. 29.

Oil of sweet orange peel.....fl.oz. 8½
Oil of caraway seed.....m. 100
Oil of coriander seed.....m. 100
Oil of cassia.....m. 100
Oil of anise (or oil of nutmeg)...m. 50
Alcohol.....fl.oz. 12

The oils used must be perfectly fresh. One fluidounce of this flavor is used for 1 gallon of elixir.

Elixir of Galls, Aromatic.

Galls.....av.oz. 1
Nutmegs.....av.oz. ½
Cinnamon.....av.oz. ½
Brandy.....sufficient.
Elixir of orange.....fl.oz. 10

Reduce the drugs to moderately coarse powder, moisten with brandy, pack in a percolate and percolate until 6 fluidounces of liquid are obtained, to which add the elixir.

Elixir de Garus. (Elixir Gari.)

I.
Cinnamon.....gr. 30
Canella.....gr. 30
Cloves.....gr. 30
Nutmeg.....gr. 30
Myrrh.....gr. 110
Aloes.....gr. 220
Spanish saffron.....gr. 8
Orange flower water.....fl.oz. 1
Water.....fl.oz. 8
Simple syrup.....fl.oz. 16
Alcohol.....fl.oz. 16

Reduce the drugs, except the saffron, to a

moderately coarse powder, macerate for 24 hours in a small still with 8 fluidounces of alcohol and the water, then distil off 8 fluidounces; to this distillate add the saffron, the remainder of the alcohol and the orange flower water, macerate for 2 days, agitating occasionally; add the syrup, and filter.

II.

Oil of cassia.....	drops	8
Oil of cloves.....	drops	8
Oil of mace.....	drops	8
Saffron.....	gr.	20
Tincture of vanilla.....	fl.dr	$\frac{1}{2}$
Alcohol.....	fl.oz.	5
Orange flower water.....	fl.oz.	$6\frac{1}{2}$
Sugar.....	av.oz.	7

Mix the oil, saffron, tincture and alcohol, macerate for 2 days, agitating occasionally; strain to remove the saffron, add the orange flower water and sugar, agitate until the latter is dissolved, and filter.—H. modified.

Elixir of Gentian.

I.

Fluid extract of gentian.....	fl.dr.	$5\frac{1}{2}$
Compound spirit of cardamom.....	fl.dr.	4
Solution of tersulphate of iron.....	fl.dr.	4
Water of ammonia.....	fl.dr.	$4\frac{1}{2}$
Alcohol,		
Distilled water,		
Aromatic elixir, of each.....	sufficient.	

Dilute the solution of tersulphate of iron with 4 fluidounces of cold water, and add it, constantly stirring, to the water of ammonia, previously diluted with an equal volume of cold water. Collect the precipitate on a well-wetted muslin-strainer, allow it to drain completely, return it to the vessel, mix it intimately with 4 fluidounces of water, and again drain. Repeat this operation once more with the same quantity of water. When the precipitate has been completely drained for the third time, fold the strainer, and press it gently so as to remove the water as completely as possible without loss of magma; then remove the magma into a tared bottle, and ascertain its weight. Now add to the magma one-fifth of its weight of alcohol, the fluid extract, compound tincture and 12 fluidounces of aromatic elixir, and shake the mixture occasionally during 24 hours. Filter through paper, and pass enough aromatic elixir through the filter to make the product measure 16 fluidounces.

Each fluidram represents about 2 gr. of gentian.—N. F. (last edition).

II.

Extract of gentian.....	gr.	70
Aromatic spirit.....	fl.dr.	8
Tincture of vanilla.....	fl.dr.	2
Simple syrup.....	fl.oz.	1
Aromatic elixir, enough to make.....	fl.oz.	16

Dissolve the extract in about 2 fluidounces of aromatic elixir, add the syrup, spirit, tincture and remainder of the elixir. Filter, if necessary. This is of about the same strength as the preceding.—N. F. (1st edition).

III. This preparation is also made according to one of the formulas for compound elixir of gentian which follow.

Elixir of Gentian, Compound.

I.

Stronger compound infusion of gentian, N. F.....	fl.oz.	$4\frac{1}{2}$
Aromatic elixir.....	fl.oz.	$11\frac{3}{4}$

II.

Gentian.....	gr.	256
Coriander.....	gr.	64
Bitter orange peel.....	gr.	64
Alcohol,		
Water, of each.....	sufficient	
Sugar.....	av.oz.	5
Aromatic spirit.....	fl.oz.	1
Egg albumen.....	gr.	120
Citric acid.....	gr.	5

Mix alcohol and water in the proportion of 1 of the former to 2 of the latter by measure, and with this mixture percolate the drugs, previously ground to moderately fine powder, until 12 fluidounces of percolate are obtained. To this percolate add the albumen and citric acid, agitate until the latter is dissolved, add the aromatic spirit and filter. In the absence of dried egg albumen, the white of 1 egg may be employed.

III.

Compound tincture of gentian.....	fl.oz.	$5\frac{1}{4}$
Simple elixir.....	fl.oz.	$10\frac{3}{4}$

Each fluidram represents 2 gr. of gentian.

Elixir of Gentian and Bismuth.**Elixir of Gentian, Bismuth and Iron.****Elixir of Gentian, Bismuth, Iron and Strychnine.****Elixir of Gentian, Bismuth and Strychnine.**

Refer for above under Elixir of Bismuth and its combinations.

Elixir of Gentian and Cinchona.**Elixir of Gentian, Cinchona and Iron Malate.**

Refer for above under Elixir of Cinchona and its combinations.

Elixir of Gentian with Iron Chloride Tincture.

Tincture of citro-chloride of iron f.dr. 12¼
Elixir of gentian, enough to make.....f.oz. 16

Mix and filter, if necessary.

Each fluidram represents about ¾ gr. of ferric chloride, and nearly 2 gr. of gentian.—N. F.

Elixir of Gentian and Iron Phosphate.

(Ferrated Elixir of Gentian.)

Iron phosphate, soluble.....gr. 128
Distilled water, hot.....f.dr. 4
Elixir of gentian, enough to make.....f.oz. 16

Dissolve the iron phosphate in the water, add the elixir of gentian, and filter, if necessary.

Each fluidram represents 1 gr. of iron phosphate and nearly 2 gr. of gentian.—N. F.

Elixir of Gentian and Iron Pyrophosphate.

Iron pyrophosphate, soluble...gr. 128
Distilled water, hot.....f.dr. 4
Elixir of gentian, enough to make.....f.oz. 16

Dissolve the iron salt in the water, add the elixir, and filter, if necessary.

Each fluidram contains 1 gr. of iron salt and represents nearly 2 gr. of gentian.

Elixir of Gentian, Iron Phosphate, Nux Vomica and Quassia.

Tincture of nux vomica.....m. 256
Iron phosphate.....gr. 128
Distilled water, hot.....f.dr. 4
Fluid extract of quassia.....f.dr. 4
Compound fluid extract of gentian.....f.dr. 4
Simple elixir...enough to make f.oz. 16

Dissolve the iron phosphate in the water, add the other ingredients and filter.

Each fluidram contains 1 gr. of iron phosphate, and represents ¾ gr. of nux vomica, nearly 2 gr. of quassia, and 1½ gr. of gentian.

Elixir of Golden Seal and Bismuth.**Elixir of Golden Seal, Bismuth and Iron.**

Refer for above to Elixir of Bismuth and its combinations.

Elixir of Gentian and Phosphorus.

Fluid extract of gentian.....f.dr. 10
Elixir of phosphorus.....f.oz. 8
Compound elixir of taraxacum..f.oz. 5
Aromatic elixir, enough to make f.oz. 16

Each fluidram represents 1½ gr. of phosphorus and 5 gr. of gentian.

Elixir of Golden Seal. (Elixir of Hydrastis.)

Glycerite of hydrastis.....f.dr. 10½
Simple elixir, enough to make..f.oz. 16

Each fluidram represents 5 gr. of golden seal.

Elixir of Grindelia.

Fluid extract of grindelia.....f.oz. 1
Compound spirit of orange.....f.dr. 1½
Alcohol.....f.dr. 14¼
Compound elixir of taraxacum..f.oz. 18

Mix them, allow the mixture to stand a few days, if convenient, then filter.

Each fluidounce represents 80 gr. of grindelia.—N. F.

Elixir of Guaiac.

Tincture of guaiac.....f.oz. 4
Potassium carbonate.....gr. 20
Water.....f.dr. 2
Glycerin.....f.oz. 4
Compound elixir of taraxacum..f.oz. 4
Simple syrup.....f.oz. 4

Dissolve the potassium carbonate in the water, add to the tincture of guaiac and to this mixture add the remaining ingredients in the order given above.

Elixir of Guarana.

I.

Fluid extract of guarana.....f.oz. 3½
Aromatic elixir.....f.oz. 3½
Compound elixir of taraxacum..f.oz. 9½

Mix them; allow the mixture to stand during 48 hours, if convenient, and filter.

Each fluidram represents about 12 gr. of guarana.—N. F.

II.

Guarana, powdered.....av.oz. 3½
Light magnesia.....gr. 175
Oil of cinnamon.....drops. 5
Simple syrup.....f.dr. 13
Diluted alcohol.....sufficient
Sand, clean and coarse.....av.oz. 6½

Mix the guarana and magnesia, moisten with 2½ fluidounces of diluted alcohol, set aside for 24 hours, then mix with the sand,

pack in a percolator, percolate until 18 fluidounces of liquid are obtained, then remove the mass from the percolator, inclose it in a cloth and express in a tincture press; to the percolate add the oil and syrup, and make up to 16 fluidounces by addition of the expressed liquid, previously concentrating the latter, if necessary, by evaporation.—H. modified and Brit. Form.

Each fluidram represents about 11 gr. of guarana.

Elixir of Guarana, Compound. (Elixir of Guarana and Celery.)

Refer to Elixir of Celery and Guarana.

Elixir of Guarana and Coca.

Refer to Elixir of Coca and Guarana.

Elixir of Helonias.

Fluid extract of helonias.....fl.oz. 4
Simple elixir.....fl.oz. 12

Mix, allow to stand for 24 hours and filter.

Each fluidram represents 15 gr. of helonias.

Elixir of Helonias, Compound. (Compound Elixir of Squaw-vine.—Compound Elixir of Mitchellia.)

Fluid extract of false unicorn
(helonias dioica).....fl.oz. 2
Fluid extract of mitchella.....fl.oz. 4
Fluid extract of blue cohosh.....fl.oz. 2
Fluid extract of crampbark.....fl.oz. 2
Purified talcum.....av.oz. $\frac{1}{2}$
Aromatic elixir, enough to make fl.oz. 16
Mix and filter.

Each fluidram represents nearly 14 gr. of mitchella, and 7 gr. each of helonias, blue cohosh and crampbark.

Elixir of Hops.

Fluid extract of hops.....fl.oz. 2
Magnesium carbonate.....gr. 120
Tincture of vanilla.....fl.dr. 4
Compound elixir of taraxacum fl.oz. 2
Aromatic elixir, enough to make.....fl.oz. 16

Triturate the fluid extract with the magnesium carbonate, then gradually add the compound elixir of taraxacum, tincture of vanilla, and the aromatic elixir. Allow the mixture to stand several days, if convenient, occasionally agitating and then filter.

Each fluidram represents $7\frac{1}{2}$ gr. of hops.—N. F.

Elixir of Hypophosphites.

Calcium hypophosphite.....gr. 384
Sodium hypophosphite.....gr. 128
Potassium hypophosphite.....gr. 128
Citric acid.....gr. 80
Water.....fl.oz. 4
Glycerin.....fl.dr. 4
Compound spirit of cardamom, fl.dr. 4
Aromatic elixir, enough to make.....fl.oz. 16

Dissolve the hypophosphites and the citric acid in the water; then add the glycerin, compound spirit and the aromatic elixir. Filter, if necessary.

Each fluidram contains 3 gr. of calcium hypophosphite and 1 gr. each of sodium and potassium hypophosphite.—N. F.

Elixir of Hypophosphites, Compound.

The elixir of hypophosphites with iron is sold and dispensed under this name.

Elixir of Hypophosphite of Calcium.

Refer to Elixir of Calcium Hypophosphite.

Elixir of Hypophosphites and Cherries.

Refer for this to Elixir of Cherries and its combinations.

Elixir of Hypophosphites and Cinchona.

Refer to Elixir of Cinchona and Hypophosphites.

Elixir of Hypophosphites with Iron.

Calcium hypophosphite.....gr. 188
Sodium hypophosphite.....gr. 128
Potassium hypophosphite.....gr. 64
Sulphate of iron, clear crystals.....gr. 96
Citric acid.....gr. 30
Distilled water.....fl.oz. 4
Simple syrup.....fl.oz. 4
Aromatic elixir, enough to make.....fl.oz. 16

Dissolve the hypophosphites in 3 fluid ounces of water, and add the syrup. Dissolve the sulphate of iron in the remainder of the water, and mix this with the other solution. Then add 6 fluidounces of aromatic elixir, set the mixture aside, in a cold place, for 12 hours, and filter from the deposited calcium sulphate. Finally, dissolve the citric acid in the filtrate, and pass enough aromatic elixir through the filter to make 16 fluidounces.

Each fluidram contains about $\frac{1}{2}$ gr. of hypophosphite of iron (ferrous), about 1 gr.

each of the hypophosphites of calcium and sodium, and $\frac{1}{2}$ gr. of potassium hypophosphite.—N. F.

Elixir of Hypophosphites of Iron and Quinine.

- I.
- | | | |
|----------------------------|----------|-------------|
| Iron hypophosphite..... | gr. | 128 |
| Potassium citrate..... | gr. | 128 |
| Quinine sulphate..... | gr. | 128 |
| Calcium hypophosphite..... | gr. | 30 |
| Spirit of orange..... | fl.dr. | 2 |
| Orange flower water..... | fl.oz. | 1 |
| Sugar..... | av.oz. | 5 |
| Alcohol, | | |
| Distilled water..... | of each, | sufficient. |

Dissolve the iron hypophosphite with the aid of the potassium citrate in the orange flower water, and enough water to make the solution measure $6\frac{1}{2}$ fluidounces, and in this dissolve the sugar. Triturate the quinine sulphate with 5 fluidounces of alcohol, add a solution of the calcium hypophosphite in 4 fluidrams of water, and shake the mixture occasionally during 1 hour; filter, and wash the filter with enough alcohol to make $6\frac{1}{2}$ fluidounces. Add this solution to the spirit of orange, mix this with the iron solution and sugar solution previously prepared, and filter the whole.

Each fluidram contains 1 gr. each of the hypophosphites of iron and quinine.

II.

- | | |
|---------------------------------|-------------------------|
| Solution of iron hypophosphite, | |
| N. F. | fl.dr. 12 $\frac{3}{4}$ |
| Quinine hypophosphite | gr. 128 |
| Hypophosphorous acid | sufficient |
| Simple elixir, enough to make | fl.oz. 16 |

Mix the quinine hypophosphite with 8 fluidounces of elixir, add enough of the acid to dissolve the quinine, add the solution of iron hypophosphite, and then enough elixir to make 16 fluidounces, and filter.

This is of the same strength as the preceding.

Elixir of Hypophosphites of Iron, Quinine and Strychnine.

This may be prepared by dissolving $1\frac{1}{2}$ gr. of strychnine sulphate in 4 fluidrams of distilled water, and adding enough of the preceding elixir to make 16 fluidounces.

Elixir of Hypophosphites with Malt.

Refer for above to Elixir of Calcium Hypophosphite and its combinations.

Elixir of Hypophosphite of Iron.

Refer to Elixir of Iron Hypophosphite.

Elixir of Hypophosphite of Sodium.

- | | | |
|----------------------------|--------|-----|
| Sodium hypophosphite | gr. | 256 |
| Citric acid | gr. | 30 |
| Aromatic elixir, enough to | | |
| make | fl.oz. | 16 |

Dissolve the sodium hypophosphite and the citric acid in the elixir by agitation, and filter, if necessary.

Each fluidram contains 2 gr. of sodium hypophosphite.—N. F.

Elixir of Hypophosphites with Tar.

Refer to Elixir of Calcium Hypophosphite and its combinations.

Elixir of Six Iodides.

- | | | |
|-----------------------------------|------------|-----|
| Arsenic iodide..... | gr. | 1 |
| Mercuric iodide | gr. | 1 |
| Manganese iodide..... | gr. | 13 |
| Sodium iodide..... | gr. | 128 |
| Potassium iodide..... | gr. | 128 |
| Solution of iron iodide, N. F.... | m. | 15 |
| Sodium hypophosphite..... | sufficient | |
| Simple elixir, enough to make | fl.oz. | 16 |

Add the six iodides to the elixir, dissolve by agitation, add a few grains of sodium hypophosphite, or sufficient to decolorize the liquid, and filter.

Each fluidram contains 1-128 gr. each of arsenic and mercury iodides, 1-12 gr. of ferrous iodide, 1-10 gr. of manganese iodide, and 1 gr. each of sodium and potassium iodides.

Elixir of Iodides of Arsenic and Mercury.

Refer for this to Elixir of Arsenic and its combinations.

Elixir of Iodide of Calcium.

Refer for the above to Elixir of Calcium Iodide.

Elixir of Iodide of Potassium Compound. (Alterative Elixir.)

- | | | |
|----------------------------------|--------|------------------|
| Potassium iodide | gr. | 640 |
| Tincture of citrochloride of | | |
| iron | fl.dr. | 10 $\frac{1}{2}$ |
| Spirit of orange..... | fl.dr. | 4 |
| Fluid extract of saxifrage..... | fl.dr. | 12 |
| Fluid extract of stillingia..... | fl.dr. | 12 |
| Fluid extract of menispermum | fl.dr. | 12 |
| Fluid extract of helonias | fl.dr. | 12 |
| Sugar..... | av.oz. | 4 $\frac{1}{2}$ |
| Water, enough to make..... | fl.oz. | 16 |

Dissolve the potassium iodide in the water,

add the tincture of iron, and in this mixture dissolve the sugar by agitation. Mix the fluid extracts, add the spirit, then the syrup, allow the whole to stand for two days, and filter.

Each fluidram contains 5 gr. of potassium iodide, and represents about $\frac{1}{4}$ gr. of ferric chloride, and about $5\frac{1}{4}$ gr. each of saxifraga, stillingia, menispermum and helonias.

Elixir of Iodide of Potassium.

Potassium iodide gr. 640
Aromatic elixir of licorice,
enough to make fl. oz. 16

Dissolve by agitation.

Each fluidram contains 5 gr. of potassium iodide.

Elixir of Iron and Ammonium Valerianate.

Refer for this to Elixir of Ammonium Valerianate and its combinations.

Elixir of Iron, Beef and Cinchona.

Elixir of Iron, Beef, Cinchona and Strychnine.

Elixir of Iron, Beef and Coca.

Elixir of Iron, Beef and Malt.

Refer for above under Elixir of Beef and its combinations.

Elixir of Iron and Arsenic Chlorides.

Elixir of Iron, Arsenic and Mercury Chlorides.

Refer for above to Elixir of Arsenic and its combinations.

Elixir of Iron and Berberine.

Refer for above to Elixir of Berberine and its combinations.

Elixir of Iron and Bismuth.

Elixir of Iron, Bismuth and Cinchona.

Elixir of Iron, Bismuth, Cinchona and Pepsin.

Elixir of Iron, Bismuth, Cinchona, Pepsin and Strychnine.

Elixir of Iron, Bismuth, Cinchona and Strychnine.

Elixir of Iron, Bismuth and Gentian.

Elixir of Iron, Bismuth, Gentian and Strychnine.

Elixir of Iron, Bismuth and Golden Seal.

Elixir of Iron, Bismuth and Pepsin.

Elixir of Iron, Bismuth, Pepsin and Quinine.

Elixir of Iron, Bismuth and Strychnine.

Refer for the above to Elixir of Bismuth and its combinations.

Elixir of Iron, Damiana, Nux Vomica and Phosphorus.

Elixir of Iron, Damiana and Phosphorus.

Refer for the above to Elixir of Damiana and its combinations.

Elixir of Iron, Calcium Lactophosphate and Cinchona.

Elixir of Iron and Cinchona.

Elixir of Iron, Cinchona and Pepsin.

Elixir of Iron, Cinchona and Strychnine.

Refer for the above to the National Formulary.

Elixir of Iron, Cinchona and Phosphorus.

Refer for above to Elixir of Cinchona and its combinations.

Elixir of Iron and Cinchonidine.

Elixir of Iron, Cinchonidine and Strychnine.

Refer for above to Elixir of Cinchonidine and its combinations.

Elixir of Iron and Malt.

Refer to the National Formulary.

Elixir of Iron, Malt and Beef.

Refer for this to Elixir of Beef and its combinations.

Elixir of Iron and Pepsin. (Ferrated Elixir of Pepsin.)

Refer to Elixir of Pepsin and Iron.

Elixir of Iron, Pepsin and Quinine.

Iron pyrophosphate, soluble.... gr. 256

Quinine hydrochlorate..... gr. 32

Distilled water, hot..... fl. oz. 1

Elixir of pepsin, N. F., enough

to make..... fl. oz. 16

Dissolve the iron salt in the water, add the elixir and the quinine salt, agitate occasionally until dissolved, and filter. Each

fluidram contains 2 gr. of iron pyrophosphate, $\frac{1}{2}$ gr. of quinine hydrochlorate, and nearly 1 gr. of pepsin.

Elixir of Iron, Quinine and Arsenic.

Iron pyrophosphate	gr. 128
Quinine hydrochlorate	gr. 64
Solution of arsenious acid	m. 400
Distilled water, hot	fl.dr. 4
Simple elixir, enough to make fl.oz.	16

Dissolve the iron pyrophosphate in the water, dissolve the quinine in about 12 fluidounces of elixir, by agitation, mix the solutions, add the acid solution and the remainder of the elixir, then neutralize exactly with ammonia water, carefully added, and filter.

Each fluidram contains 1 gr. of iron pyrophosphate, $\frac{1}{2}$ gr. of quinine hydrochlorate, and 1-32 gr. of arsenious acid.

Elixir of Iron, Quinine and Strychnine.

Tincture of citrochloride of iron fl.oz.	2
Quinine hydrochlorate	gr. 64
Strychnine sulphate	gr. $1\frac{1}{2}$
Alcohol	fl.dr. 4
Aromatic elixir, enough to make fl.oz.	16

Dissolve the alkaloidal salts in 12 fluidounces of elixir, then add the tincture and the alcohol, and finally, the remainder of the elixir; filter, if necessary.

Each fluidram represents about 1 gr. of ferric chloride, $\frac{1}{2}$ gr. of quinine hydrochlorate, and 1-100 gr. of strychnine sulphate.—N. F.

Elixir of Iron and Wild Cherry. (Fer-rated Elixir of Wild Cherry.)

Iron pyrophosphate	gr. 128
Distilled water, hot	fl.dr. 4
Fluid extract of wild cherry	fl.oz. 2
Alcohol	fl.oz. 2
Simple elixir, enough to make fl.oz.	16

Mix the alcohol and fluid extract, add the elixir, and then iron salt previously dissolved in the water, and filter through purified talcum.

Each fluidram contains 1 gr. of iron pyrophosphate, and represents $7\frac{1}{2}$ gr. of wild cherry.

Elixir of Iron Chloride Tincture and Gentian.

Refer to Elixir of Gentian and Iron Chloride Tincture.

Elixir of Iron and Quinine Citrate.

(Elixir of Iron and Quinine.)

Citrate of iron and quinine	gr. 256
Water	fl.oz. 1
Aromatic elixir, enough to make fl.oz.	16

Dissolve the citrate in the water, add the elixir, and filter. Each fluidram contains 2 gr. of iron and quinine citrate.

Elixir of Iron and Hypophosphites.

Refer for this to the Elixirs of the Hypophosphites.

Elixir of Iron Hypophosphite.

Solution of iron hypophosphite fl.dr.	12 $\frac{3}{4}$
Aromatic elixir, enough to make fl.oz.	16

Mix, allow the mixture to stand a few days in a cool place, and filter, if necessary.

Each fluidram contains 1 gr. of ferric hypophosphite.—N. F.

Elixir of Iron and Quinine Hypophosphites.

Elixir of Iron, Quinine and Strychnine Hypophosphites.

Refer for the above to the Elixirs of Hypophosphites.

Elixir of Iron Lactate.

Iron lactate, in crusts	gr. 128
Potassium citrate	gr. 384
Aromatic elixir, enough to make	fl.oz. 16

Triturate the iron lactate with the potassium citrate and about 4 fluidounces of aromatic elixir, gradually added, until solution has been effected; then add the remainder of the aromatic elixir, and filter.

Each fluidram contains 1 gr. of iron lactate.—N. F.

Elixir of Iron Malate, Cinchona and Gentian.

Refer to Elixir of Cinchona and its combinations.

Elixir of Iron Peptonate.

I. Dried egg albumen	gr. 75
(Or fresh egg albumen	gr. 560)
Distilled water	sufficient
Hydrochloric acid	fl.dr. 2
Pepsin, pure	gr. 4
Solution of iron oxychloride	fl.dr. 15
Solution of soda	sufficient
Brandy	fl.dr. 14

Dissolve the albumen in 16 fluidounces of distilled water, add the hydrochloric acid and

pepsin, digest the mixture at a temperature of 40 degrees C., until it produces only a faint turbidity with nitric acid; allow to cool, neutralize with solution of soda, strain, mix the colature with the solution of iron oxychloride to which has been added 16 fluidounces of distilled water. The mixture is again neutralized with solution of soda, the precipitate is washed by decantation with distilled water, until the washings are no longer affected by silver nitrate. The precipitate is now drained on a well-wetted muslin strainer, transferred to a porcelain capsule, 10 m. of hydrochloric acid are added, and the mixture heated on a water bath and stirred until solution occurs. To this solution is now added distilled water to make 14½ fluidounces, and lastly, the brandy is added.—D.

Iron peptonate may be obtained by spreading the solution in the porcelain capsule upon glass plates and allowing to dry.

II.

Pepsin, pure	gr. 4
Dried egg albumen	gr. 30
Simple syrup	fl.dr. 4
Solution of dialized iron or iron-oxychloride	fl.dr. 12½
Aromatic elixir	fl. dr. 12½
Distilled water, enough to make	fl.oz. 16

Dissolve the albumen in 3½ fluidounces of water, add the pepsin and digest for four hours at 50 degrees C. Mix the syrup and solution of iron with 9 fluidounces of the water, then add to the pepsin solution and heat to 90 degrees C. Cool, add the elixir and the remainder of the water. Set aside for 8 days and then decant the clear solution.

If to the above be added 33 grains of cryst. manganese chloride, previously dissolved in 1 fluidram of water, it will constitute the "Solution of Iron and Manganese Peptonate."

Elixir of Iron Phosphate.

Iron phosphate, soluble	gr. 256
Water, hot	fl.oz. 1
Aromatic elixir, enough to make	fl.oz. 16

Dissolve the iron phosphate in the water, mix this solution with the aromatic elixir, and filter, if necessary.

Each fluidram contains 2 gr. of iron phosphate.—N. F.

Elixir of Iron Phosphate, Cinchonidine and Strychnine.

Iron phosphate, soluble	gr. 256
Potassium citrate	gr. 32
Cinchonidine sulphate	gr. 64
Strychnine sulphate	gr. 1½
Alcohol	fl.oz. 1
Water, hot	fl.dr. 6
Aromatic elixir, enough to make	fl.oz. 16

Dissolve the iron phosphate and potassium citrate in the water. To 12 fluidounces of aromatic elixir, contained in a bottle, add the alcohol, and afterwards the alkaloidal salts, and agitate until the latter are dissolved, or nearly so. Then mix the two solutions, and, having shaken the mixture, add the remainder of the aromatic elixir. Finally, filter.

Each fluidram contains 2 gr. of iron phosphate, ½ gr. of cinchonidine sulphate, and 1½ gr. of strychnine sulphate.—N. F.

Elixir of Iron Phosphate, Gentian, Nux Vomica and Quassia.

Refer to Elixir of Gentian and its combinations.

Elixir of Iron, Phosphate, Quinine and Strychnine.

I.

Iron phosphate, soluble	gr. 128
Quinine (alkaloid)	gr. 64
Strychnine (alkaloid)	gr. 2
Alcohol	fl.oz. 2
Distilled water, hot	fl.dr. 6
Aromatic elixir, enough to make	fl.oz. 16

Dissolve the alkaloids in the alcohol and add 12 fluidounces of aromatic elixir, then dissolve the iron phosphate in the water, and add to the previous mixture. Finally, add the remainder of the aromatic elixir.

Each fluidram contains 1 gr. of iron phosphate, ½ gr. of quinine, and ¼ gr. of strychnine.—N. F.

II.

Strychnine (alkaloid)	gr. 1½
Quinine sulphate	gr. 64
Citric acid	gr. 5
Iron phosphate, soluble	gr. 256
Alcohol	fl.oz. 3
Simple syrup	fl.oz. 6
Distilled water, hot	fl.oz. 4
Orange flower water	fl.oz. 3
Sodium bicarbonate	sufficient

Triturate the strychnine and quinine sulphate with the acid until well mixed, and rub

this mixture with the alcohol gradually added. Heat the syrup to about 65 degrees C., add to it the alcoholic liquid, and stir until clear. Dissolve the iron salt in the water, add the orange flower water, mix this with the preceding liquid, and allow to cool. Then add sodium bicarbonate in very small amounts, stirring thoroughly after each addition, until the elixir remains but slightly acid. Allow to stand for a few hours, then filter through white filter paper. Any excess of soda must be avoided.

III.

Strychnine sulphate.....	gr. 1½
Quinine hydrochlorate.....	gr. 128
Iron phosphate, soluble.....	gr. 256
Potassium citrate.....	gr. 82
Alcohol.....	fl.oz. 1½
Distilled water, hot.....	fl.oz. 1
Glycerin.....	fl.dr. 16
Aromatic elixir, enough to make	fl.oz. 16

Dissolve the quinine salt in 10 fluidounces of elixir, mixed with the alcohol, by agitation, and mix this solution with the strychnine sulphate previously dissolved in 2 fluidrams of the water.

Dissolve the iron phosphate in 6 fluidrams of the water, add 2 fluidounces of glycerin and mix this solution with the preceding liquid. Now to this mixture add the potassium citrate dissolved in 1½ fluidounces of aromatic elixir mixed with 2 fluidrams of glycerin. Allow the whole to stand for several hours, then filter.

IV.

Quinine sulphate.....	gr. 128
Iron phosphate, soluble.....	gr. 256
Strychnine sulphate.....	gr. 1½
Alcohol.....	fl.oz. 2
Glycerin.....	fl.oz. 2
Simple syrup.....	fl.oz. 2
Distilled water, hot.....	fl.oz. 1
Aromatic elixir, enough to make	fl.oz. 16

Dissolve the strychnine salt in the alcohol, and add the quinine; mix the glycerin and syrup, and heat, and when warm add to the alkaloidal solution; continue heating carefully, until quinine is dissolved, and add enough elixir to make 15 fluidounces. Dissolve the iron salt in the water, add this to previous liquid, let stand three or four hours, and filter.

V.

Iron phosphate, soluble.....	gr. 256
Quinine sulphate.....	gr. 128
Strychnine sulphate.....	gr. 1½
Alcohol.....	fl.oz. 1
Simple syrup.....	fl.oz. 8
Aromatic elixir, enough to make	fl.oz. 16

Dissolve the iron phosphate in the syrup by the aid of heat, and raise the temperature to near the boiling point. Dissolve the alkaloidal salts in 6 fluidounces of aromatic elixir, contained in a flask, by the aid of heat, and while still hot add this solution all at once to the iron solution, shaking immediately. Allow to stand 24 hours, then filter.

Elixir of Iron, Quinine and Strychnine Phosphates. (Elixir of Three Phosphates.)

Nearly all of the preparations dispensed under this name contain the iron as phosphate or pyrophosphate, and the quinine and strychnine in some other form than as phosphate. If it be desired to dispense such a preparation as "elixir of three phosphates," then any of the preparations made according to formulas given in this formulary under elixir of iron phosphate, or pyrophosphate, quinine and strychnine may be dispensed.

The following formula does actually contain the three bases in the form of phosphates, which are maintained in solution by the excess of hydrochloric acid:

Solution of iron chloride, U. S. P.....	fl.dr. 7½
Quinine (alkaloid).....	gr. 110
Strychnine (alkaloid).....	gr. 1
Phosphoric acid, U. S. P.....	fl.dr. 2½
Distilled water.....	fl.dr. 2
Alcohol.....	fl.oz. 1
Simple elixir.....	fl.oz. 10
Simple syrup, enough to make	fl.oz. 16

Mix the iron solution, phosphoric acid and water, and in this mixture dissolve the alkaloids; to this solution add the syrup, and then elixir and alcohol previously mixed.

However, any elixir containing iron in the form of phosphate or pyrophosphate will inevitably darken upon exposure to light, and therefore some manufacturers place upon the market a so-called "permanent elixir of three phosphates," which contains the iron as citrochloride; a preparation of this character would be well represented by the elixir of

iron, quinine and strychnine of the National Formulary.

Elixir of Iron "Protoxide".

Solution of "protoxide" of iron fl.oz. 2
Simple elixir fl.oz. 14

Elixir of Iron "Protoxide" and Cinchona.

Refer to Elixir of Cinchona and its combinations.

Elixir of Iron Pyrophosphate.

Iron pyrophosphate, soluble.... gr. 256
Distilled water, hot..... fl.oz. 1
Aromatic elixir, enough to make fl.oz. 16

Dissolve the iron pyrophosphate in the water, add the elixir, and filter, if necessary.

Each fluidram contains 2 gr. of iron pyrophosphate.—N. F.

Elixir of Iron Pyrophosphate and Ammonium Valerianate.

Elixir of Iron Pyrophosphate, Ammonium Valerianate and Cinchonidine.

Elixir of Iron Pyrophosphate, Ammonium Valerianate, Cinchonidine and Quinine.

Elixir of Iron Pyrophosphate, Ammonium Valerianate, Cinchonidine, Quinine and Strychnine.

Elixir of Iron Pyrophosphate, Ammonium Valerianate, Cinchonidine and Strychnine.

Elixir of Iron Pyrophosphate, Ammonium Valerianate and Quinine.

Elixir of Iron Pyrophosphate, Ammonium Valerianate, Quinine and Strychnine.

Refer for the above to Elixir of Ammonium Valerianate and its combinations.

Elixir of Iron Pyrophosphate and Gentian.

Refer to Elixir of Gentian and its combinations.

Elixir of Iron Pyrophosphate and Quinine.

This may be prepared like elixir of iron pyrophosphate, quinine and strychnine, the strychnine to be omitted, of course.

Elixir of Iron Pyrophosphate, Quinine and Strychnine.

I.

Iron pyrophosphate, soluble.... gr. 256
Quinine sulphate..... gr. 64
Strychnine..... gr. 1½
Citric acid..... gr. 5
Alcohol..... fl.oz. 8
Spirit of orange..... fl. dr. 1½
Distilled water..... fl.oz. 7
Simple syrup..... fl.oz. 6
Ammonia water..... sufficient

Triturate the quinine sulphate, strychnine and acid together, until minutely divided, and add the alcohol and spirit of orange; warm the syrup to about 65 degrees C., and add to the alcoholic mixture, stirring until clear. To this add the iron salt previously dissolved in the water; to the mixture add ammonia water, drop by drop, until the mixture is clear, and finally filter.

II.

Strychnine (alkaloid)..... gr. 1½
Quinine (alkaloid)..... gr. 64
Iron pyrophosphate..... gr. 128
Alcohol..... fl.oz. 2
Distilled water, hot..... fl.oz. 3
Simple syrup..... fl.oz. 3
Aromatic elixir..... fl.oz. 8

Dissolve the strychnine and quinine in the alcohol, also the iron salt in the water, mix the two solutions, add the syrup and then the elixir, and filter, if necessary.

III.

Strychnine (alkaloid)..... gr. 1½
Quinine sulphate..... gr. 64
Citric acid..... gr. 5
Alcohol..... fl.oz. 3
Simple syrup..... fl.oz. 6
Distilled water, hot..... fl.oz. 4
Orange flower water..... fl.oz. 3
Iron pyrophosphate, soluble.... gr. 256
Sodium bicarbonate..... sufficient

Triturate together the alkaloids and the acids until thoroughly mixed; rub this with the alcohol gradually added. Heat the syrup to about 65 degrees C., add it to the alcoholic mixture, and stir until clear. Dissolve the iron salt in the water, and add the orange flower water; mix the two solutions, and when cold, add carefully bicarbonate of sodium in small portions until the elixir remains but slightly acid. Allow to stand for a few hours, then filter through white filter paper. Excess of soda must be carefully avoided.

Elixir of Iron Pyrophosphate and Strychnine.

Iron pyrophosphate.....gr. 256
Strychnine sulphate.....gr. 1½
Distilled water, hot.....fl.oz. 2
Simple elixir, enough to make.fl.oz. 16

Dissolve the iron salt and strychnine sulphate in the hot water, add the elixir, and filter.

Each fluidram contains 2 gr. of iron pyrophosphate and 1½ gr. of strychnine sulphate,

Elixir of Iron Salicylate.

Iron salicylate.....gr. 640
Distilled water, hot.....fl.oz. 2½
Glycerin.....fl.oz. 2½
Simple elixir, enough to make.fl.oz. 16

Dissolve the iron salt in the hot water and glycerin, add the elixir, allow to stand for a few days and filter.

Each fluidram contains 5 gr. of iron salicylate.

Elixir of Iron Salicylate, Compound.

Iron salicylate.....gr. 640
Distilled water, hot.....fl.oz. 2½
Glycerin.....fl.oz. 2½
Fluid extract of colchicum root fl.dr. 9
Deodorized tincture of opium..fl.dr. 4½
Simple elixir, enough to make.fl.oz. 16

Dissolve the iron salt in the hot water and glycerin, add the other ingredients, allow to stand a few days, and filter.

Each fluidram contains 5 gr. of iron salicylate and represents about 4½ gr. of colchicum root and 2 m. of deodorized tincture of opium.

Elixir of Iron Valerianate.

Iron valerianate.....gr. 128
Alcohol.....fl.oz. 1
Simple elixir.....fl.oz. 15

Dissolve the iron salt in the alcohol, add the elixir, and filter.

Each fluidram contains 1 gr. of iron valerianate.

Elixir of Jaborandi. (Elixir of Pilocarpus.)

Fluid extract of jaborandi.....fl.oz. 1
Syrup of coffee.....fl.oz. 3
Tincture of vanilla.....fl.dr. 4
Compound elixir of taraxacum,
enough to make.....fl.oz. 16

Mix, allow the mixture to stand during 4 days, if convenient, and filter.

Each fluidram represents 3¾ gr. of jaborandi.—N. F.

Elixir of Iron, Quinine and Zinc Valerianates.

Refer for this to Elixirs of Valerianates of different bases.

Elixir of Kola.

Fluid extract of kola.....fl.oz. 2
Ammoniated glycyrrhizin.....gr. 60
Saccharin.....gr. 60
Oil of orange.....drops 5
Water.....fl.oz. 7
Alcohol.....fl.oz. 3½
Simple syrup.....fl.oz. 3½
Simple elixir, enough to make..fl.oz. 16

Dissolve the ammoniated glycyrrhizin in the water and in this dissolve the saccharin; add the syrup and alcohol, followed by the fluid extract of kola, to which has been added the oil of orange; set aside for 5 or 6 hours agitating occasionally; filter, and add the simple elixir.

Each fluidram represents 7½ gr. of kola.

Elixir of Lactophosphate of Calcium.

Elixir of Lactophosphate of Calcium and Cinchona.

Elixir of Lactophosphate of Calcium, Cinchona and Iron.

Refer for above to Elixir of Calcium Lactophosphate and its combinations.

Elixir of Licorice.

I.

Fluid extract of licorice.....fl.oz. 2
Aromatic elixir.....fl.oz. 14
Mix and filter, if necessary.—N. F.

II.

Purified extract of licorice
(U. S. P.).....av.oz. 3½
Fennel water.....fl.oz. 9½
Anisated solution of ammonia..fl.oz. 8½
Dissolve the extract in the water and add the solution.—Germ. Pharm.

The mixture is turbid and must be shaken before use.

This second preparation is best known by the names Elixir e Succo Liquiritiæ, Elixir Pectorale, Pectoral Elixir, Liquor Pectoralis, Brust Tropfen and Brust Elixir.

Elixir of Licorice, Aromatic.

I. Fluid extract of licorice.....fl.oz. 2
Oil of cloves.....drops 3
Oil of cinnamon (Ceylon)....drops 8
Oil of nutmeg.....drops 2
Oil of fennel.....drops 6
Magnesium carbonate.....gr. 120
Aromatic elixir, enough to make fl.oz. 16
Triturate the oils with the magnesium car-

iron, quinine and strychnine of the National Formulary.

Elixir of Iron "Protoxide".

Solution of "protoxide" of iron fl.oz. 2
Simple elixir.....fl.oz. 14

Elixir of Iron "Protoxide" and Cinchona.

Refer to Elixir of Cinchona and its combinations.

Elixir of Iron Pyrophosphate.

Iron pyrophosphate, soluble....gr. 256
Distilled water, hot.....fl.oz. 1
Aromatic elixir, enough to make fl.oz. 16

Dissolve the iron pyrophosphate in the water, add the elixir, and filter, if necessary.

Each fluidram contains 2 gr. of iron pyrophosphate.—N. F.

Elixir of Iron Pyrophosphate and Ammonium Valerianate.

Elixir of Iron Pyrophosphate, Ammonium Valerianate and Cinchonidine.

Elixir of Iron Pyrophosphate, Ammonium Valerianate, Cinchonidine and Quinine.

Elixir of Iron Pyrophosphate, Ammonium Valerianate, Cinchonidine, Quinine and Strychnine.

Elixir of Iron Pyrophosphate, Ammonium Valerianate, Cinchonidine and Strychnine.

Elixir of Iron Pyrophosphate, Ammonium Valerianate and Quinine.

Elixir of Iron Pyrophosphate, Ammonium Valerianate, Quinine and Strychnine.

Refer for the above to Elixir of Ammonium Valerianate and its combinations.

Elixir of Iron Pyrophosphate and Gentian.

Refer to Elixir of Gentian and its combinations.

Elixir of Iron Pyrophosphate and Quinine.

This may be prepared like elixir of iron pyrophosphate, quinine and strychnine, the strychnine to be omitted, of course.

Elixir of Iron Pyrophosphate, Quinine and Strychnine.

I.

Iron pyrophosphate, soluble....gr. 256
Quinine sulphate.....gr. 64
Strychnine.....gr. 1½
Citric acid.....gr. 5
Alcohol.....fl.oz. 8
Spirit of orange.....fl. dr. 1½
Distilled water.....fl.oz. 7
Simple syrup.....fl.oz. 6
Ammonia water.....sufficient

Triturate the quinine sulphate, strychnine and acid together, until minutely divided, and add the alcohol and spirit of orange; warm the syrup to about 65 degrees C., and add to the alcoholic mixture, stirring until clear. To this add the iron salt previously dissolved in the water; to the mixture add ammonia water, drop by drop, until the mixture is clear, and finally filter.

II.

Strychnine (alkaloid).....gr. 1½
Quinine (alkaloid).....gr. 64
Iron pyrophosphate.....gr. 128
Alcohol.....fl.oz. 2
Distilled water, hot.....fl.oz. 3
Simple syrup.....fl.oz. 3
Aromatic elixir.....fl.oz. 8

Dissolve the strychnine and quinine in the alcohol, also the iron salt in the water, mix the two solutions, add the syrup and then the elixir, and filter, if necessary.

III.

Strychnine (alkaloid).....gr. 1½
Quinine sulphate.....gr. 64
Citric acid.....gr. 5
Alcohol.....fl.oz. 3
Simple syrup.....fl.oz. 6
Distilled water, hot.....fl.oz. 4
Orange flower water.....fl.oz. 3
Iron pyrophosphate, soluble....gr. 256
Sodium bicarbonate.....sufficient

Triturate together the alkaloids and the acids until thoroughly mixed; rub this with the alcohol gradually added. Heat the syrup to about 65 degrees C., add it to the alcoholic mixture, and stir until clear. Dissolve the iron salt in the water, and add the orange flower water; mix the two solutions, and when cold, add carefully bicarbonate of sodium in small portions until the elixir remains but slightly acid. Allow to stand for a few hours, then filter through white filter paper. Excess of soda must be carefully avoided.

may be used for the preparation of this ancient and complicated remedy:

Tincture of aloes and myrrh.....	f.oz. 8
Tincture of rhubarb.....	f.oz. 2
Compound tincture of gentian.....	f.oz. 1
Water.....	f.oz. 1
Alcohol.....	f.oz. 4

Elixir of Lupulin.

Fluid extract of lupulin.....	f.oz. 1
Magnesium carbonate.....	av.oz. 1
Simple elixir, enough to make.....	f.oz. 16

Triturate the fluid extract with the talcum, add the elixir, transfer to a bottle, set aside for several hours, and filter.

The above is of the strength usually furnished by manufacturers; Diehl's formula, which is largely used, directs the use of 2 fluidounces of the fluid extract to the pint of finished elixir.

Elixir of Lupulin and Sodium Bromide.

Fluid extract of lupulin.....	f.dr. 10½
Purified talcum.....	gr. 120
Sodium bromide.....	gr. 640
Aromatic elixir of licorice, enough to make.....	f.oz. 16

Triturate the fluid extract with the talcum, add some of the elixir, transfer to a bottle, add the sodium salt and the remainder of the elixir, dissolve by agitation, and filter after several hours.

Each fluidram represents 5 gr. of lupulin and contains 5 gr. of sodium bromide.

Elixir of Malt.

Extract of malt.....	f.oz. 4
Simple elixir.....	f.oz. 12

Elixir of Malt, Beef and Iron.

Refer to Elixir of Beef and its combinations.

Elixir of Malt, and Calcium and Sodium Hypophosphites.

Refer to Elixir of Calcium Hypophosphite and its combinations.

Elixir of Malt and Iron.

Extract of malt.....	f.oz. 4
Iron phosphate, soluble.....	gr. 128
Water, hot.....	f.dr. 4
Aromatic elixir, enough to make.....	f.oz. 16

Dissolve the iron phosphate in the water by the aid of heat, mix the solution with the

extract of malt, and add the elixir. Set the mixture aside for 24 hours, and filter.—N. F.

Each fluidram represents 1 gr. of iron phosphate and 15 m. of extract of malt.

Extract of malt, most suitable for this preparation, should have about the consistence of balsam of Peru, at a temperature of about 15 degrees C.

Elixir of Malt and Pepsin.

Elixir of malt.....	f.oz. 8
Elixir of pepsin, N. F.....	f.oz. 8

Mix and filter.

Each fluidram represents ¼ gr. of pepsin and 15 m. of extract of malt.

Elixir of Manaca and Salicylates.

Fluid extract of manaca.....	f.oz. 2½
Sodium salicylate.....	av.oz. 1¾
Potassium salicylate.....	gr. 884
Lithium salicylate.....	gr. 96
Simple elixir, enough to make.....	f.oz. 16

Dissolve the salicylates in some of the elixir, add the fluid extract and the remainder of the elixir, allow to stand for a few hours, and filter through talcum.

Each fluidram contains 6 gr. of sodium salicylate, 3 gr. of potassium salicylate, and ¾ gr. of lithium salicylate and represents nearly 10 gr. of manaca.

Elixir of Matico, Compound.

Fluid extract of matico.....	f.oz. 8
Fluid extract of buchu.....	f.oz. 1½
Fluid extract of cubeb.....	f.oz. 1½
Alcohol.....	f.oz. 2
Simple elixir.....	f.oz. 4
Compound elixir of taraxacum.....	f.oz. 4

Mix, set aside for 3 days, and filter through talcum.

Each fluidram represents 11 gr. of matico and nearly 4 gr. each of buchu and cubeb.

Elixir Mercury and Arsenic Iodides.

Refer to Elixir of Arsenic and its combinations.

Elixir of Mercury, Arsenic and Iron Chlorides.

Refer to Elixirs of Chlorides for above.

Elixir of Morphine Valerianate.

Morphine valerianate.....	gr. 16
Simple elixir.....	f.oz. 16

Dissolve by agitation, and filter.

Each fluidram contains ½ gr. of morphine valerianate.

bonate, and gradually add 14 fluidounces of aromatic elixir. Shake occasionally during an hour, filter, and pass enough aromatic elixir through the filter to make 14 fluidounces of filtrate. Add the fluid extract to the filtrate, mix, and filter, if necessary.—N. F.

II.

Cardamom (seed without capsule)	gr. 16
Cinnamon	gr. 16
Staranise	gr. 16
Coriander	gr. 8
Caraway	gr. 8
Canella	gr. 4
Nutmeg	gr. 4
Cloves	gr. 4
Vanilla	gr. 24
Ammoniated glycyrrhizin	gr. 110
Diluted alcohol	fl.oz. 64
Water, hot	fl.oz. 1
Simple syrup, enough to make	fl.oz. 16

Reduce the drugs to moderately coarse powder, macerate for 7 days in the diluted alcohol, and filter, adding, if necessary, enough diluted alcohol through the filter to make the filtrate measure 64 fluidounces. Dissolve the glycyrrhizin in the water, mix this solution with the filtrate, and add the syrup.

III.

Select licorice root, cut and slightly bruised	av.oz. 2½
Water of ammonia	fl.dr. 4
Glycerin	fl.oz. 1
Water	fl.oz. 16

Macerate for 24 hours, strain, boil for 10 minutes, filter, and evaporate at gentle heat until reduced to 6 fluidounces.

Now add to this evaporated infusion:

Simple syrup	fl.oz. 6
Alcohol	fl.oz. 4
Spirit of orange	fl.dr. 2
Oil of cinnamon (Ceylon)	drops 2

This elixir is employed for disguising the taste of bitter medicines, particularly quinine. No acid should be used because it dissolves the quinine and makes its bitter taste more perceptible, and at the same time liberates the glycyrrhizin from its combination with ammonia and renders it insoluble, and therefore valueless for the purpose of disguising or modifying taste.

Elixir of Licorice with Ammonium Chloride, Compound.

Refer for this to Elixir of Ammonium Chloride, etc.

Elixir of Licorice Compound.

Pure extract of licorice, (U. S. P.)	av.oz. ¼
Wine of antimony	fl.oz. 1
Paregoric	fl.oz. 2
Spirit of nitrous ether	fl.dr. 4
Elixir of cherries, enough to make	fl.oz. 16

Dissolve the extract in a portion of the elixir and add the remaining ingredients.

The above replaces "brown mixture" in the form of an elixir.

Elixir of Lithium Bromide.

Lithium bromide	gr. 640
Citric acid	gr. 30
Aromatic elixir, enough to make	fl.oz. 16

Dissolve the solids in about 14 fluidounces of aromatic elixir, by agitation; add the remainder of the aromatic elixir and filter.

Each fluidram contains about 5 gr. of lithium bromide.—N. F.

Elixir of Lithium Citrate.

Lithium citrate	gr. 640
Aromatic elixir, enough to make	fl.oz. 16
Dissolve by agitation, and filter.	

Each fluidram contains 5 gr. of lithium citrate.—N. F.

Elixir of Lithium Salicylate.

Lithium salicylate	gr. 640
Aromatic elixir, enough to make	fl.oz. 16
Dissolve by agitation, and filter.	

Each fluidram contains 5 gr. of lithium salicylate.—N. F.

Elixir of Long Life. ("Elixir ad Longam Vitam."—"Elixir of Life."—Compound Tincture of Aloes. (Germ. Pharm.) ("Swedish Bitters."))

Aloes	gr. 200
Rhubarb	gr. 85
Gentian	gr. 85
Zedoary	gr. 85
Spanish saffron	gr. 85
Water	fl.oz. 4
Alcohol	fl.oz. 12

Mix the drugs in coarse powder with the two liquids, macerate for 3 days, agitating frequently; express and filter. Sometimes 85 gr. of agaric is added to the other drugs, and the menstruum generally employed is diluted alcohol.

The following is a simple formula which

may be used for the preparation of this ancient and complicated remedy:

Tincture of aloes and myrrh.....	f. oz. 8
Tincture of rhubarb.....	f. oz. 2
Compound tincture of gentian.....	f. oz. 1
Water.....	f. oz. 1
Alcohol.....	f. oz. 4

Elixir of Lupulin.

Fluid extract of lupulin.....	f. oz. 1
Magnesium carbonate.....	av. oz. 1
Simple elixir, enough to make.....	f. oz. 16

Triturate the fluid extract with the talcum, add the elixir, transfer to a bottle, set aside for several hours, and filter.

The above is of the strength usually furnished by manufacturers; Diehl's formula, which is largely used, directs the use of 2 fluidounces of the fluid extract to the pint of finished elixir.

Elixir of Lupulin and Sodium Bromide.

Fluid extract of lupulin.....	f. dr. 10½
Purified talcum.....	gr. 120
Sodium bromide.....	gr. 640
Aromatic elixir of licorice, enough to make.....	f. oz. 16

Triturate the fluid extract with the talcum, add some of the elixir, transfer to a bottle, add the sodium salt and the remainder of the elixir, dissolve by agitation, and filter after several hours.

Each fluidram represents 5 gr. of lupulin and contains 5 gr. of sodium bromide.

Elixir of Malt.

Extract of malt.....	f. oz. 4
Simple elixir.....	f. oz. 12

Elixir of Malt, Beef and Iron.

Refer to Elixir of Beef and its combinations.

Elixir of Malt, and Calcium and Sodium Hypophosphites.

Refer to Elixir of Calcium Hypophosphite and its combinations.

Elixir of Malt and Iron.

Extract of malt.....	f. oz. 4
Iron phosphate, soluble.....	gr. 128
Water, hot.....	f. dr. 4
Aromatic elixir, enough to make.....	f. oz. 16

Dissolve the iron phosphate in the water by the aid of heat, mix the solution with the

extract of malt, and add the elixir. Set the mixture aside for 24 hours, and filter.—N. F.

Each fluidram represents 1 gr. of iron phosphate and 15 m. of extract of malt.

Extract of malt, most suitable for this preparation, should have about the consistence of balsam of Peru, at a temperature of about 15 degrees C.

Elixir of Malt and Pepsin.

Elixir of malt.....	f. oz. 8
Elixir of pepsin, N. F.....	f. oz. 8

Mix and filter.

Each fluidram represents ½ gr. of pepsin and 15 m. of extract of malt.

Elixir of Manaca and Salicylates.

Fluid extract of manaca.....	f. oz. 2½
Sodium salicylate.....	av. oz. 1¾
Potassium salicylate.....	gr. 384
Lithium salicylate.....	gr. 96
Simple elixir, enough to make.....	f. oz. 16

Dissolve the salicylates in some of the elixir, add the fluid extract and the remainder of the elixir, allow to stand for a few hours, and filter through talcum.

Each fluidram contains 6 gr. of sodium salicylate, 3 gr. of potassium salicylate, and ¾ gr. of lithium salicylate and represents nearly 10 gr. of manaca.

Elixir of Matico, Compound.

Fluid extract of matico.....	f. oz. 3
Fluid extract of buchu.....	f. oz. 1½
Fluid extract of cubeb.....	f. oz. 1½
Alcohol.....	f. oz. 2
Simple elixir.....	f. oz. 4
Compound elixir of taraxacum.....	f. oz. 4

Mix, set aside for 3 days, and filter through talcum.

Each fluidram represents 11 gr. of matico and nearly 4 gr. each of buchu and cubeb.

Elixir Mercury and Arsenic Iodides.

Refer to Elixir of Arsenic and its combinations.

Elixir of Mercury, Arsenic and Iron Chlorides.

Refer to Elixirs of Chlorides for above.

Elixir of Morphine Valerianate.

Morphine valerianate.....	gr. 16
Simple elixir.....	f. oz. 16

Dissolve by agitation, and filter.

Each fluidram contains ¼ gr. of morphine valerianate.

bonate, and gradually add 14 fluidounces of aromatic elixir. Shake occasionally during an hour, filter, and pass enough aromatic elixir through the filter to make 14 fluidounces of filtrate. Add the fluid extract to the filtrate, mix, and filter, if necessary.—N. F.

II.

Cardamom (seed without capsule) gr.	18
Cinnamon.....gr.	16
Staranise.....gr.	16
Coriander.....gr.	8
Caraway.....gr.	8
Canella.....gr.	4
Nutmeg.....gr.	4
Cloves.....gr.	4
Vanilla.....gr.	24
Ammoniated glycyrrhizin.....gr.	110
Diluted alcohol.....fl.oz.	6½
Water, hot.....fl.oz.	1
Simple syrup, enough to make fl.oz.	16

Reduce the drugs to moderately coarse powder, macerate for 7 days in the diluted alcohol, and filter, adding, if necessary, enough diluted alcohol through the filter to make the filtrate measure 6½ fluidounces. Dissolve the glycyrrhizin in the water, mix this solution with the filtrate, and add the syrup.

III.

Select licorice root, cut and slightly bruised.....av.oz.	2½
Water of ammonia.....fl.dr.	4
Glycerin.....fl.oz.	1
Water.....fl.oz.	16

Macerate for 24 hours, strain, boil for 10 minutes, filter, and evaporate at gentle heat until reduced to 6 fluidounces.

Now add to this evaporated infusion:

Simple syrup.....fl.oz.	6
Alcohol.....fl.oz.	4
Spirit of orange.....fl.dr.	2
Oil of cinnamon (Ceylon).....drops	2

This elixir is employed for disguising the taste of bitter medicines, particularly quinine. No acid should be used because it dissolves the quinine and makes its bitter taste more perceptible, and at the same time liberates the glycyrrhizin from its combination with ammonia and renders it insoluble, and therefore valueless for the purpose of disguising or modifying taste.

Elixir of Licorice with Ammonium Chloride, Compound.

Refer for this to Elixir of Ammonium Chloride, etc.

Elixir of Licorice Compound.

Pure extract of licorice, (U. S. P.).....av.oz.	¼
Wine of antimony.....fl.oz.	1
Paregoric.....fl.oz.	2
Spirit of nitrous ether.....fl.dr.	4
Elixir of cherries, enough to make.....fl.oz.	16

Dissolve the extract in a portion of the elixir and add the remaining ingredients.

The above replaces "brown mixture" in the form of an elixir.

Elixir of Lithium Bromide.

Lithium bromide.....gr.	640
Citric acid.....gr.	30
Aromatic elixir, enough to make fl.oz.	16

Dissolve the solids in about 14 fluidounces of aromatic elixir, by agitation; add the remainder of the aromatic elixir and filter.

Each fluidram contains about 5 gr. of lithium bromide.—N. F.

Elixir of Lithium Citrate.

Lithium citrate.....gr.	640
Aromatic elixir, enough to make fl.oz.	16
Dissolve by agitation, and filter.	

Each fluidram contains 5 gr. of lithium citrate.—N. F.

Elixir of Lithium Salicylate.

Lithium salicylate.....gr.	640
Aromatic elixir, enough to make fl.oz.	16

Dissolve by agitation, and filter.

Each fluidram contains 5 gr. of lithium salicylate.—N. F.

Elixir of Long Life. ("Elixir ad Longam Vitam."—"Elixir of Life."—Compound Tincture of Aloes. (Germ. Pharm.) ("Swedish Bitters."))

Aloes.....gr.	200
Rhubarb.....gr.	35
Gentian.....gr.	35
Zedoary.....gr.	35
Spanish saffron.....gr.	35
Water.....fl.oz.	4
Alcohol.....fl.oz.	12

Mix the drugs in coarse powder with the two liquids, macerate for 3 days, agitating frequently; express and filter. Sometimes 35 gr. of agaric is added to the other drugs, and the menstruum generally employed is diluted alcohol.

The following is a simple formula which

may be used for the preparation of this ancient and complicated remedy:

Tincture of aloes and myrrh.....	f. oz. 8
Tincture of rhubarb.....	f. oz. 2
Compound tincture of gentian.....	f. oz. 1
Water.....	f. oz. 1
Alcohol.....	f. oz. 4

Elixir of Lupulin.

Fluid extract of lupulin.....	f. oz. 1
Magnesium carbonate.....	av. oz. 1
Simple elixir, enough to make.....	f. oz. 16

Triturate the fluid extract with the talcum, add the elixir, transfer to a bottle, set aside for several hours, and filter.

The above is of the strength usually furnished by manufacturers; Diehl's formula, which is largely used, directs the use of 2 fluidounces of the fluid extract to the pint of finished elixir.

Elixir of Lupulin and Sodium Bromide.

Fluid extract of lupulin.....	f. dr. 10½
Purified talcum.....	gr. 120
Sodium bromide.....	gr. 640
Aromatic elixir of licorice, enough to make.....	f. oz. 16

Triturate the fluid extract with the talcum, add some of the elixir, transfer to a bottle, add the sodium salt and the remainder of the elixir, dissolve by agitation, and filter after several hours.

Each fluidram represents 5 gr. of lupulin and contains 5 gr. of sodium bromide.

Elixir of Malt.

Extract of malt.....	f. oz. 4
Simple elixir.....	f. oz. 12

Elixir of Malt, Beef and Iron.

Refer to Elixir of Beef and its combinations.

Elixir of Malt, and Calcium and Sodium Hypophosphites.

Refer to Elixir of Calcium Hypophosphite and its combinations.

Elixir of Malt and Iron.

Extract of malt.....	f. oz. 4
Iron phosphate, soluble.....	gr. 128
Water, hot.....	f. dr. 4
Aromatic elixir, enough to make.....	f. oz. 16

Dissolve the iron phosphate in the water by the aid of heat, mix the solution with the

extract of malt, and add the elixir. Set the mixture aside for 24 hours, and filter.—N. F.

Each fluidram represents 1 gr. of iron phosphate and 15 m. of extract of malt.

Extract of malt, most suitable for this preparation, should have about the consistence of balsam of Peru, at a temperature of about 15 degrees C.

Elixir of Malt and Pepsin.

Elixir of malt.....	f. oz. 8
Elixir of pepsin, N. F.....	f. oz. 8

Mix and filter.

Each fluidram represents ¼ gr. of pepsin and 15 m. of extract of malt.

Elixir of Manaca and Salicylates.

Fluid extract of manaca.....	f. oz. 2½
Sodium salicylate.....	av. oz. 1¾
Potassium salicylate.....	gr. 884
Lithium salicylate.....	gr. 96
Simple elixir, enough to make.....	f. oz. 16

Dissolve the salicylates in some of the elixir, add the fluid extract and the remainder of the elixir, allow to stand for a few hours, and filter through talcum.

Each fluidram contains 6 gr. of sodium salicylate, 3 gr. of potassium salicylate, and ¾ gr. of lithium salicylate and represents nearly 10 gr. of manaca.

Elixir of Matico, Compound.

Fluid extract of matico.....	f. oz. 3
Fluid extract of buchu.....	f. oz. 1½
Fluid extract of cubeb.....	f. oz. 1½
Alcohol.....	f. oz. 2
Simple elixir.....	f. oz. 4
Compound elixir of taraxacum.....	f. oz. 4

Mix, set aside for 3 days, and filter through talcum.

Each fluidram represents 11 gr. of matico and nearly 4 gr. each of buchu and cubeb.

Elixir Mercury and Arsenic Iodides.

Refer to Elixir of Arsenic and its combinations.

Elixir of Mercury, Arsenic and Iron Chlorides.

Refer to Elixirs of Chlorides for above.

Elixir of Morphine Valerianate.

Morphine valerianate.....	gr. 16
Simple elixir.....	f. oz. 16

Dissolve by agitation, and filter.

Each fluidram contains ⅙ gr. of morphine valerianate.

Elixir of Nux Vomica, Bismuth and Pepsin.

Refer to Elixir of Bismuth and its combinations.

Elixir of Nux Vomica, Damiana, Iron and Phosphorus.

See Elixir of Damiana and its combinations.

Elixir of Nux Vomica, Gentian, Iron and Quassia.

Refer to Elixir of Gentian and its combinations.

Elixir of Nux Vomica and Phosphorus.

Tincture of nux vomica.....fl.dr. 4½
Elixir of phosphorus, enough to make.....fl.oz. 16

Mix them. This preparation should be freshly made, when wanted for use.

Each fluidram represents 2 m. of tincture of nux vomica, and nearly 1-50 gr. of phosphorus.—N. F.

Elixir of Orange.

Oil of orange.....fl.dr. 4½
Alcohol.....fl.oz. 14
Water.....fl.oz. 22
Simple syrup.....fl.oz. 28
Purified talcum.....av.oz. ½

Mix the oil and alcohol, add the talcum, shake well, and then add the other ingredients in small portions at a time, agitating well after each addition.—U. S. P. 1880 modified.

The oil used should be a perfectly fresh sweet oil of orange peel.

Elixir of Orange, Compound. (Compound Wine of Orange.—Vinum Amarum, Bitter Wine.—Elixir Stomachicum, Stomachic Elixir.—Elixir Viscerale Hoffmanni.)

Bitter orange peel, cut.....gr. 1600
Cinnamon, bruised.....gr. 820
Potassium carbonate.....gr. 80
Extract of gentian.....gr. 160
Extract of wormwood.....gr. 160
Extract of buckbean.....gr. 160
Extract of cascarella.....gr. 160
Sherry wine, enough to make.....fl.oz. 16

Macerate the orange peel, cinnamon, and potassium carbonate with 16 fluidounces of sherry wine for 8 days, agitating occasionally; express the liquid portion, in the latter

dissolve the extracts, filter, and add enough sherry wine through the filter to make the filtrate measure 16 fluidounces.—Germ. Pharm.

The National Formulary also recognizes what is identically the same preparation under the title of "compound wine of orange"; in the latter no extracts are used, but the drugs themselves are mixed with the orange peel, cinnamon, and potassium carbonate, the whole being extracted by percolation.

Elixir of Pancreas.

Take 1 pig pancreas, chop into pieces, and macerate in a cool place for 3 days in a mixture of

Water.....fl.oz. 82
Glycerin.....fl.oz. 6½
Hydrochloric acid.....fl.dr. 5

Strain, add ½ fluidram of oil of orange and enough glycerin to make 48 fluidounces, and filter.

Elixir of Pancreatin.

Pancreatin, pure.....gr. 128
Sodium bicarbonate.....gr. 16
Water.....fl.oz. 2
Simple elixir, enough to make.....fl.oz. 16

Macerate the pancreatin in the water for 24 hours, add the sodium bicarbonate, triturate until dissolved, gradually add the elixir and filter.

Each fluidram represents 1 gr. of pancreatin.

The elixir of pancreas may be substituted for the above, if deemed desirable.

Elixir of Pancreatin and Bismuth.

Refer to Elixir of Bismuth and its combinations.

Elixir of Pancreatin, Bismuth and Pepsin.

Citrate of bismuth and ammonium.....gr. 128
Pancreatin, pure.....gr. 64
Pepsin, pure.....gr. 64
Distilled water, hot.....fl.oz. 1
Water of ammonia.....sufficient
Glycerin.....fl.oz. 2
Water.....fl.oz. 2
Tincture of cudbear.....fl.dr. 2
Simple elixir, enough to make.....fl.oz. 16

Triturate the bismuth salt with the water, allow the insoluble portion to subside, decant the clear portion, to the residue add ammonia water very gradually, until solution occurs,

carefully avoiding any excess, and mix this liquid with the decanted portion.

Macerate the pepsin and pancreatin with the glycerin and water for 24 hours, agitating occasionally; add the tincture, the bismuth solution, and the elixir, and filter through purified talcum.

Each fluidram contains 1 gr. each of pepsin and of citrate of bismuth and ammonium, and $\frac{1}{2}$ gr. of pancreatin.

Elixir of Pancreatin and Pepsin.

Pancreatin, pure.....	gr. 64
Pepsin, pure.....	gr. 128
Glycerin.....	fl.oz. 2
Water.....	fl.oz. 2
Tincture of cudbear.....	fl.dr. 2
Simple elixir, enough to make.....	fl.oz. 16

Macerate the pepsin and pancreatin with the glycerin and water for 24 hours, agitating occasionally; add the tincture and elixir, and filter through talcum.

Each fluidram contains 1 gr. of pepsin and $\frac{1}{2}$ gr. of pancreatin.

Elixir of Pancreatin, Potassium and Rhubarb.

Refer to Elixir of Rhubarb and its combinations.

Elixir of Papain.

Papain.....	gr. 256
Glycerin.....	fl.oz. $8\frac{1}{2}$
Sherry wine.....	fl.oz. 8
Saccharin.....	gr. 10
Chloroform water.....	fl.oz. $4\frac{1}{2}$

Mix, let stand for 7 days, agitating occasionally, and filter.

Each fluidram contains 2 gr. of papain.

Elixir of Paraldehyde.

Paraldehyde.....	fl.oz. 4
Glycerin.....	fl.oz. 2
Alcohol.....	fl.oz. 5
Tincture of cardamom.....	fl.dr. $2\frac{1}{2}$
Oil of orange.....	m. 15
Oil of cinnamon.....	m. 15
Compound tincture of cudbear.....	fl.dr. 2
Aromatic elixir, enough to make.....	fl.oz. 16

Mix the ingredients in the order given, and filter, if necessary.—N. F.

Each fluidram contains 15 m. of paraldehyde.

Elixir of paraldehyde varies in strength from 10 to 25 per cent, as prescribed in different localities. The formula here given produces a 25 per cent. elixir, and from this the weaker preparations may readily be made

by the addition of aromatic elixir colored with compound tincture of cudbear in the proportion used in the above formula.

To make a 20 per cent elixir of paraldehyde, for instance, 4 fluidounces of the 25 per cent elixir are mixed with 1 fluidounce of colored aromatic elixir. To make 5 fluidounces of 15 per cent elixir, 3 fluidounces of the 25 per cent elixir are required, and to make the same quantity of 10 per cent elixir, 2 fluidounces of the above elixir are required.

Elixir of Pareira Brava.

Fluid extract of pareira.....	fl.oz. 2
Simple elixir.....	fl.oz. 14

Mix, allow to stand for 24 hours and filter through talcum.

Each fluidram represents $7\frac{1}{2}$ gr. of pareira brava.

Elixir of Pepsin.

Pepsin, pure.....	gr. 128
Hydrochloric acid.....	fl.dr. $\frac{1}{2}$
Glycerin.....	fl.oz. 2
Compound elixir of taraxacum.....	fl.oz. 1
Alcohol.....	fl.oz. 8
Purified talcum.....	gr. 120
Sugar.....	av.oz. $4\frac{1}{2}$
Water, enough to make.....	fl.oz. 16

Mix the pepsin with 6 fluidounces of water, add the glycerin and acid, and agitate until solution has been effected. Then add the compound elixir of taraxacum, alcohol, and the talcum, and mix thoroughly. Set the mixture aside for a few hours, occasionally agitating. Then filter it through a wetted filter, dissolve the sugar in the filtrate, and pass the remainder of the water through the filter.

Each fluidram represents 1 gr. of pepsin.—N. F.

Elixir of Pepsin, Compound. (Elixir of Lactated (or Lactinated) Pepsin.—Compound Digestive Elixir.)

I.	
Pepsin, soluble scales.....	gr. 75
Pancreatin, pure.....	gr. 8
Diastase.....	gr. 8
Lactic acid.....	m. 20
Hydrochloric acid.....	m. 40
Glycerin.....	fl.oz. 4
Water.....	fl.oz. 2
Tincture of cudbear, N. F.....	fl.dr. 2
Talcum, purified.....	gr. 120
Aromatic elixir, enough to make.....	fl.oz. 16
Add the acid to the water and glycerin, and	

to this mixture add the pepsin pancreatin, and diastase, and macerate until apparently dissolved; then add the tincture and aromatic elixir; thoroughly incorporate the purified talcum and filter.—N. F.

II.

Pepsin, pure.....	gr. 80
Pancreatin.....	gr. 40
Diastase or ptyolin.....	gr. 10
Cudbear, powdered.....	gr 180
Diluted hydrochloric acid.....	m. 20
Lactic acid.....	drops 3
Alcohol.....	fl.oz. 5
Water.....	fl.oz. 7
Simple syrup.....	fl.oz. 4

Mix all the above except the syrup, macerate for 8 days, agitating frequently; filter, to the filtrate add the syrup, and then through the filter add enough of a mixture of alcohol and water, in the proportion of 5 to 7 by measure, to make the liquid measure 16 fluid-ounces.

Elixir of Pareira and Buchu.**Elixir of Pareira and Buchu, Compound.**

Refer for these to Elixir of Buchu and its combinations.

Elixir of Pepsin and Bismuth.**Elixir of Pepsin, Bismuth and Cinchona.****Elixir of Pepsin, Bismuth, Cinchona and Iron.****Elixir of Pepsin, Bismuth, Cinchona, Iron and Strychnine.****Elixir of Pepsin, Bismuth and Iron.****Elixir of Pepsin, Bismuth, Iron and Quinine.****Elixir of Pepsin, Bismuth and Nux Vomica.****Elixir of Pepsin, Bismuth, and Quinine,****Elixir of Pepsin, Bismuth, and Strychnine.****Elixir of Pepsin, Bismuth and Wafer Ash.**

Refer for above to Elixir of Bismuth and its combinations.

Elixir of Pepsin and Cinchona.**Elixir of Pepsin, Cinchona and Iron.****Elixir of Pepsin, Cinchona and Strychnine.**

Refer for above to Elixir of Cinchona and its combinations.

Elixir of Pepsin and Iron.

Tincture of citrochloride of iron. fl.dr. 9½

Elixir of pepsin, enough to make fl.oz. 16

Mix and filter, if necessary.

Each fluidram represents about ½ gr. of chloride of iron (ferric), and nearly 1 gr. of pepsin.—N. F.

Elixir of Pepsin, Iron and Quinine.

Refer to Elixirs of Iron and combinations.

Elixir of Pepsin and Malt.

Refer to Elixir of Malt and its combinations.

Elixir of Pepsin and Quinine.

Quinine sulphate.....gr. 32

Elixir of pepsin.....fl.oz. 16

Agitate until dissolved and filter.

Each fluidram contains 1 gr. of pepsin and ½ gr. of quinine sulphate.

Elixir of Pepsin, Quinine and Strychnine.

Strychnine sulphate.....gr. 1½

Distilled water.....fl.dr. 4

Elixir of pepsin and quinine....fl.oz. 15½

Dissolve the alkaloidal salt in the water and add the elixir.

Each fluidram contains 1-100 gr. of strychnine sulphate, nearly ½ gr. of quinine sulphate, and nearly 1 gr. of pepsin.

Elixir of Pepsin and Strychnine.

Strychnine sulphate.....gr. 1½

Distilled water.....fl.dr. 4

Elixir of pepsin.....fl.oz. 15½

Dissolve the alkaloidal salt in the water and add the elixir.

Each fluidram contains 1-100 gr. of strychnine sulphate and nearly 1 gr of pepsin.

Elixir of Pepsin and Wafer Ash.

(Elixir Pepsin and Ptelea.)

Pepsin, pure.....gr. 128

Simple elixir.....fl.oz. 14

Fluid extract of wafer ash....fl.oz. 2

Purified talcum.....gr. 120

Add the pepsin to the simple elixir, agitate until dissolved, add the remaining ingredients, set aside for 24 hours, and filter.

Each fluidram contains 1 gr. of pepsin and represents 7½ gr. of wafer ash.

Elixir of Phosphorus.

I.

Spirit of phosphorusfl.oz. 8¼
Oil of anise.....m. 16
Glycerin.....fl.oz. 9
Aromatic elixir, enough to make fl.oz. 16

To the spirit contained in a bottle, add the oil and glycerin, and mix by repeatedly inverting bottle until a clear liquid is obtained. Then add the elixir in several portions, gently agitating after each addition, until all is added.—U. S. P.

II.

Phosphorus.....gr. 2½
Chloroformfl.dr. 4
Alcoholfl.oz. 2¼
Glycerin, enough to make.....fl.oz. 16

Dissolve the phosphorus in the chloroform, add the alcohol, and then the glycerin.—Brit. Form.

Each fluidram contains 1-50 gr. of phosphorus.

Elixir of Phosphorus, Compound.

Strychnine sulphate.....gr. 1¼
Quinine sulphate.....gr. 64
Iron pyrophosphate.....gr. 128
Distilled water, hot.....fl.oz. 1
Alcoholfl.oz. 1
Elixir of phosphorus.....fl.oz. 8
Simple elixir, enough to make fl.oz. 16

Dissolve the strychnine salt in 4 fluidrams of the water, and the iron salt in the remainder of the water.

Mix the alcohol and elixir of phosphorus, add the two solutions already prepared, then the quinine salt and the simple elixir, agitate until dissolved, and filter in a well-covered funnel.

Each fluidram contains 1-100 gr. of strychnine sulphate, 1 gr. of iron pyrophosphate, ½ gr. of quinine sulphate and 1-100 gr. of phosphorus.

Elixir of Phosphorus, Cinchona and Iron.

Refer to Elixir of Cinchona and its combinations.

Elixir of Phosphorus and Coca.

Refer to Elixir of Coca and its combinations.

Elixir of Phosphorus and Damiana.

Elixir of Phosphorus, Damiana and Iron.

Elixir of Phosphorus, Damiana, Iron and Nux Vomica.

Elixir of Phosphorus, Damiana and Nux Vomica.

Elixir of Phosphorus, Damiana and Strychnine.

Refer for above to Elixir of Damiana and its combinations.

Elixir of Phosphorus and Gentian.

Refer for this to Elixir of Gentian and its combinations.

Elixir of Phosphorus and Nux Vomica.

Refer to Elixir of Nux Vomica and its combinations.

Elixir of Phosphorus, Quinine and Strychnine.

Elixir of phosphorus.....fl.oz. 8
Quinine hydrochlorate.....gr. 82
Strychnine sulphate.....gr. 1½
Distilled water.....fl.dr. 4
Tincture of cudbear.....fl.dr. 2
Simple elixir, enough to make..fl.oz. 16

Dissolve the quinine salt in 7 fluidounces of simple elixir, and the strychnine salt in the water, mix the two solutions, and then add the other ingredients.

Each fluidram contains 1-100 gr. of strychnine sulphate, ½ gr. of quinine sulphate, and 1-100 gr. of phosphorus.

Elixir of Phosphorus and Strychnine.

Strychnine sulphate.....gr. 1½
Distilled water.....fl.dr. 4
Elixir of phosphorus.....fl.oz. 8
Tincture of cudbear.....fl.dr. 2
Simple elixir, enough to make..fl.oz. 16

Dissolve the quinine salt in the water and add the remaining ingredients.

Each fluidram contains 1-100 gr. each of phosphorus and strychnine sulphate.

Elixir of White Pine, Compound.

Fluid extract of white pine bark fl.oz. 1
Fluid extract of balsam gilead buds.....m. 64
Fluid extract of spikenard.....m. 64
Fluid extract of wild cherry bark.....fl.oz. 1
Sanguinarine nitrate.....gr. 2
Morphine acetate.....gr. 3
Chloroform.....m. 64
Alcohol.....fl.oz. 7
Water.....fl.oz. 4
Simple syrup.....fl.oz. 8

Mix the fluid extracts with the alcohol,

water and syrup previously mixed, and filter through purified talcum until clear; add the chloroform and dissolve the sanguinarine and morphine salts in the mixture.

The above represents the now well-known "white pine cough syrup" in the elixir form.

Elixir of Potassium Acetate.

Potassium acetate.....gr. 640
Aromatic elixir, enough to make fl.oz. 16

Dissolve the potassium acetate in the elixir, and filter, if necessary.

Each fluidram contains 5 gr. of potassium acetate.—N. F.

Elixir of Potassium Acetate, Buchu and Juniper.

Elixir of Potassium Acetate, Buchu, Juniper and Uva Ursi.

Refer for above to Elixir of Buchu and its combinations.

Elixir of Potassium Acetate and Juniper.

Potassium acetate.....gr. 640
Fluid extract of juniper.....fl.oz. 2
Magnesium carbonate.....gr. 120
Aromatic elixir, enough to make fl.oz. 16

Triturate the fluid extract with the magnesium carbonate, add 12 fluidounces of aromatic elixir, in which the potassium acetate has previously been dissolved, filter and add the remainder of the aromatic elixir through the filter.

Each fluidram represents 5 gr. of potassium acetate, and $7\frac{1}{2}$ gr. of juniper.—N. F.

Elixir of Potassium Bromide.

Refer to the Elixirs of Bromides.

Elixir of Potassium Iodide.

Elixir of Potassium Iodide, Compound.

Refer to the Elixirs of Iodides, etc.

Elixir Proprietatis. (Tincture Aloes Crocata.)

Aloes, coarse powder.....av.oz. 1
Myrrh, coarse powder.....av.oz. 1
Spanish saffron, cut.....gr. 110
Alcohol.....fl.oz. 16

Mix, macerate for 8 days, and filter.

In the United States, the official tincture of aloes and myrrh is frequently, though improperly, dispensed for the above preparation.

Elixir Proprietatis Paracelsi.

This is very similar to preceding. It contains double the amount of saffron, and $1\frac{1}{2}$ fluidounces of the alcohol is replaced by diluted sulphuric acid.

Elixir Pulmonic. (Pectoral Elixir.)

Pure extract of licorice, U. S. P. gr. 800
Fluid extract of squill.....m. 128
Fluid extract of senega.....m. 128
Fluid extract of henbane leaves.....m. 128
Fluid extract of ipecac.....m. 64
Morphine sulphate.....gr. 8
Distilled water.....fl.dr. 4
Tincture of cacao.....fl.oz. 1
Elixir of cherries, enough to make.....fl.oz. 16

Dissolve the morphine salt in the water add the licorice extract, mix well, add the remaining ingredients, and filter.

Each fluidram contains 1-16 gr. of morphine sulphate.

Elixir of Quassia, Gentian, Iron and Nux Vomica.

Refer to Elixir of Gentian and its combinations.

Elixir of Quinine. (Elixir of Quinine Sulphate.)

Quinine sulphate.....gr. 128
Simple elixir.....fl.oz. 16

Mix and dissolve by agitation, warming gently, if necessary, and filtering.

Each fluidram contains 1 gr. of quinine sulphate.

Elixir of Quinine Bisulphate.

Quinine bisulphate.....gr. 128
Simple elixir.....fl.oz. 16

Dissolve by agitation and filter, if necessary.

Each fluidram contains 1 gr. of quinine bisulphate.

Elixir of Quinine, Compound. (Elixir of Cinchona Alkaloids.)

Quinine sulphate.....gr. 16
Cinchonidine sulphate.....gr. 8
Cinchonine sulphate.....gr. 8
Aromatic elixir, enough to make.....fl.oz. 16

Add the alkaloidal salts to the aromatic elixir, dissolve them by agitation, and filter.—N. F.

Each fluidounce contains 1 gr. of quinine sulphate, and $\frac{1}{2}$ gr. each of cinchonidine and cinchonine sulphate.

If it is desired to impart a color to this

elixir, this may be effected by the addition of 2 fluidrams of compound tincture of cudbear to the above quantity.

Elixir of Quinine and Ammonium Valerianate.

Elixir of Quinine, Ammonium, Valerianate and Cinchonidine.

Elixir of Quinine, Ammonium Valerianate, Cinchonidine and Iron.

Elixir of Quinine, Ammonium Valerianate, Cinchonidine, Iron and Strychnine.

Elixir of Quinine, Ammonium Valerianate, Cinchonidine and Strychnine.

Elixir of Quinine, Ammonium and Strychnine Valerianates.

Refer for above to Elixir of Ammonium Valerianate and its combinations.

Elixir of Quinine and Arsenic.

Elixir of Quinine, Arsenic and Iron.

Refer to Elixir of Arsenic and its combinations.

Elixir of Quinine and Bismuth.

Elixir of Quinine, Bismuth, Iron and Pepain.

Elixir of Quinine, Bismuth and Pepain.

Refer to Elixir of Bismuth and its combinations.

Elixir of Quinine and Croton Chloral.

Refer to Elixir of Croton Chloral, Hydrate and its combinations.

Elixir of Quinine and Iron Citrate.

Elixir of Quinine, Iron and Pepain.

Elixir of Quinine, Iron and Strychnine.

Elixir of Quinine and Iron Hypophosphites.

Elixir of Quinine, Iron and Strychnine Hypophosphites.

Elixir of Quinine, Iron Phosphate and Strychnine.

Elixir of Quinine, Iron and Strychnine Phosphates.

Elixir of Quinine and Iron Pyrophosphate.

Elixir of Quinine, Iron Pyrophosphate and Strychnine.

Refer for above to Elixir of Iron and its combinations.

Elixir of Quinine and Pepain.

Refer to Elixir of Pepain and its combinations.

Elixir of Quinine and Phosphates.

Quinine sulphate.....gr. 33

Iron phosphate, soluble, hot....gr. 128

Potassium citrate.....gr. 128

Syrup of calcium lactophos-

phate.....fl.oz. 4

Water.....fl.oz. 1

Aromatic elixir, enough to make fl.oz. 18

Dissolve the quinine sulphate in 10 fluidounces of aromatic elixir, if necessary, with the aid of a gentle heat. Dissolve the iron phosphate and the potassium citrate in the water, and add the solution to that first prepared. Then add the syrup of calcium lactophosphate and lastly the remainder of the elixir; filter, if necessary.

Each fluidram contains $\frac{1}{2}$ gr. of quinine sulphate, 1 gr. of iron phosphate, and about $\frac{3}{4}$ gr. of so-called calcium lactophosphate.—N. F.

Elixir of Quinine, Phosphorus and Strychnine.

Refer to Elixir of Phosphorus and its combinations.

Elixir of Quinine and Strychnine.

Quinine sulphate.....gr. 64

Strychnine sulphate.....gr. 1 $\frac{1}{2}$

Simple elixir.....fl.oz. 16

Dissolve the alkaloidal salts in the elixir by agitation, and filter.

Each fluidram contains $\frac{1}{2}$ gr. of quinine sulphate and 1-100 gr. of strychnine sulphate.

Elixir of Quinine Valerianate.

Quinine valerianate.....gr. 128

Tincture of cudbear.....fl.oz. 2

Simple elixir, enough to make fl.oz. 16

Triturate the quinine valerianate with a little of the elixir to a smooth paste. Add about 8 fluidounces more of elixir, triturate until dissolved, add the tincture and the remainder of the elixir.

Each fluidram contains 1 gr. of quinine valerianate.

Elixir of Quinine, Iron and Zinc Valerianates.

Refer for this to the Elixirs of the Valerianates.

Elixir of Quinine and Strychnine Valerianates.

Strychnine (alkaloid).....	gr. 1½
Valerianic acid.....	sufficient
Quinine valerianate.....	gr. 128
Tincture of cudbear.....	fl.dr. 2
Simple elixir, enough to make.....	fl.oz. 16

Triturate the strychnine and quinine sulphate with a little elixir to a smooth paste, add 4 fluidounces of elixir and just enough valerianic acid to dissolve the alkaloids; then add the tincture and the remainder of the elixir, neutralize any excess of valerianic acid as described in the formula preceding, and filter.

Each fluidram contains 1 gr. of quinine valerianate and 1-100 gr. of strychnine valerianate.

Elixir of Quinine Valerianate and Strychnine.

Quinine valerianate.....	gr. 128
Strychnine sulphate.....	gr. 1½
Compound tincture of cudbear.....	fl.dr. 2
Aromatic elixir, enough to make.....	fl.oz. 16

Triturate the quinine valerianate and the strychnine sulphate with about 8 fluidounces of aromatic elixir, until they are dissolved, then add the compound tincture of cudbear and the remainder of the aromatic elixir, and filter, if necessary.

Each fluidram contains 1 gr. of quinine valerianate, and 1-100 gr. of strychnine sulphate.—N. F.

Elixir of Raspberry, Compound.

Fluid extract of rhatany.....	fl.oz. 1
Fluid extract of cinnamon.....	fl.dr. 2
Fluid extract of cloves.....	fl.dr. 2
Fluid extract of nutmeg.....	fl.dr. 2
Fluid extract of pimento.....	fl.dr. 2
Raspberry juice.....	fl.oz. 8
Simple elixir.....	fl.oz. 6
Purified talcum.....	av.oz. ¼

Shake the talcum and fluid extracts in a bottle until well mixed, add the other ingredients and filter.

Perhaps a preferable method of preparation, in some respects at least, would be by extracting the drugs with diluted alcohol, adding the juice to the percolate, flavoring and sweetening the mixture, and filtering.

Elixir of Rhubarb, Aromatic.

Aromatic fluid extract of rhubarb.....	fl.oz. 1
Simple elixir.....	fl.oz. 15

This is of the same strength as the aromatic syrup of rhubarb of the United States pharmacopœia.

Elixir of Rhubarb.

Sweet tincture of rhubarb (U. S. P.).....	fl.oz. 8
Alcohol.....	fl.oz. 1
Water.....	fl.oz. 8
Glycerin.....	fl.oz. 2
Simple syrup.....	fl.oz. 2

Mix and filter.

Each fluidram represents about 2½ gr. of rhubarb.—N. F.

Elixir of Rhubarb and Magnesium Acetate. (Elixir of Rhubarb and Magnesia.)

Magnesia, calcined.....	gr. 150
Acetic acid.....	sufficient
Fluid extract of rhubarb.....	fl.oz. 2
Aromatic elixir, enough to make.....	fl.oz. 16

Dissolve the magnesia in 2½ fluidounces of acetic acid, with the aid of a gentle heat, adding, if necessary, a little more acid, drop by drop, until the solution is neutral to test-paper. Then add the fluid extract and the elixir, and filter.

Each fluidram represents about 4 gr. of magnesium acetate and 7½ gr. of rhubarb.—N. F.

Elixir of Rhubarb and Potassium with Pancreatin.

Rhubarb.....	gr. 320
Golden seal.....	gr. 160
Cinnamon.....	gr. 160
Potassium bicarbonate.....	gr. 320
Pancreatin.....	gr. 320
Spirit of peppermint.....	fl.dr. 1
Simple syrup.....	fl.oz. 2
Diluted alcohol,	
Simple elixir.....	of each, sufficient

Moisten the rhubarb, golden seal and cinnamon (first reduced to a suitable powder), with diluted alcohol, and pack moderately in a percolator; allow to macerate 48 hours and then percolate with diluted alcohol until 6 ounces have been obtained; in the percolate dissolve the potassium bicarbonate and add the pancreatin previously dissolved in the syrup, and about 4 fluidounces of elixir; mix

thoroughly, add the spirit and enough elixir to make the whole measure 16 fluidounces, and filter.

This is similar to the preceding, containing only pancreatin in addition. Like the preceding also, it may be prepared with fluid extracts.

Elixir of Rhubarb and Potassium.

(Neutralizing Elixir.)

Rhubarb	gr. 320
Golden seal	gr. 160
Cinnamon	gr. 160
Potassium bicarbonate	gr. 320
Spirit of peppermint	fl.dr. 1
Simple syrup	fl.oz. 2
Diluted alcohol,	
Simple elixir	of each, sufficient

Reduce the three drugs to moderately coarse powder, extract them in the usual way by percolation with diluted alcohol until 6 fluidounces of percolate are obtained. In this percolate dissolve the potassium bicarbonate, add the spirit of peppermint, syrup, and enough elixir to make 16 fluidounces of product, and filter.

This preparation represents the well-known syrup of rhubarb and potassium in the elixir form.

Elixir of Rhubarb, Magnesia and Senna.

Magnesia, calcined	gr. 144
Acetic acid	sufficient
Fluid extract of rhubarb	fl.dr. 8½
Fluid extract of senna	fl.dr. 8½
Simple elixir, enough to make ..	fl.oz. 16

Dissolve the magnesia in 2½ fluidounces of acetic acid with the aid of a gentle heat, adding, if necessary, a little more acetic acid, drop by drop, until the solution is neutral to test paper; then add the fluid extracts and elixir, and filter.

Each fluidram contains 4 gr. of magnesium acetate and represents 4 gr. each of rhubarb and senna.

Elixir of Rhubarb and Senna.

Fluid extract of rhubarb	fl.oz. 2
Fluid extract of senna	fl.oz. 2
Tincture of cacao	fl.oz. 2
Simple elixir	fl.oz. 10

Mix and filter, if necessary.

Each fluidram represents 7½ gr. each of senna and rhubarb,

Elixir of Saccharin.

Saccharin	gr. 884
Sodium bicarbonate	gr. 192
Alcohol	fl.oz. 2
Distilled water, enough to make ..	fl.oz. 16

Rub the saccharin and sodium bicarbonate in a mortar, with 8 fluidounces of water gradually added; when dissolved, add the alcohol, filter, and wash the filter with the remainder of the water.

Twenty minims contain 1 gr. of saccharin.—Brit. Form.

This preparation is intended as a sweetening agent in place of sugar or syrup.

Elixir of Salicylic Acid.

Salicylic acid	gr. 640
Potassium citrate	gr. 960
Glycerin	fl.oz. 8
Aromatic elixir, enough to make ..	fl.oz. 16

Dissolve the potassium citrate in the glycerin with the aid of a gentle heat, add the acid, and continue the heat until it is dissolved; then add the elixir. This elixir should be freshly made when wanted for use.

Each fluidram contains 5 gr. of salicylic acid.—N. F.

Elixir of Salicylic Acid, Compound.

Salicylic acid	gr. 640
Sodium bicarbonate	gr. 480
Potassium iodide	gr. 192
Fluid extract of black cohosh ..	fl.dr. 4
Fluid extract of gelsemium ..	fl.dr. 2
Compound spirit of orange ..	fl.dr. 1
Glycerin	fl.oz. 4
Water	fl.oz. 4
Alcohol	fl.oz. 4
Simple syrup, enough to make ..	fl.oz. 16

Mix the acid, sodium bicarbonate and water in a capacious mortar, stir occasionally until reaction is completed, add the potassium iodide, stir until dissolved, then add the alcohol, glycerin, fluid extracts, spirit and syrup, and filter.

Elixir of Salicylates and Manaca.

Refer for this to Elixir of Manaca, etc.

Elixir of Salicylate of Iron.

Elixir of Salicylate of Iron, Compound.

Refer to combinations of elixirs containing iron.

Elixir of Salicylate of Lithium.

Refer to Elixir of Lithium Salicylate.

Elixir of Salicylate of Sodium.

Refer to Elixir of Sodium Salicylate.

Elixir of Salicylate of Sodium and Cascara Sagrada.

Refer to Elixir of Cascara Sagrada and its combinations.

Elixir of Senna.**I.**

Deodorized fluid extract of senna. fl. oz. 8
Compound tincture of cardamom fl. oz. $\frac{1}{2}$
Simple elixir. fl. oz. 7 $\frac{1}{2}$

II.

Alexandria senna. av. oz. 11
Sugar av. oz. 8
Alcohol,
Water,
Diluted alcohol. of each, sufficient
Chloroform. m. 16
Oil of coriander. drops 2
Tincture of capsicum. m. 20

Mix $2\frac{3}{4}$ fluidounces of alcohol with 8 $\frac{1}{2}$ fluidounces of water, and with it evenly moisten the senna; pack tightly in a closed vessel, macerate for 8 days, express forcibly, break up the marc, macerate it with enough more of the same kind of menstruum to furnish, in all, 11 fluidounces of liquid, express in 24 hours, mix the two liquids, add the sugar, heat in a closed vessel by means of a water-bath to 94 degrees C., maintain at this temperature 10 minutes, allow to cool, strain, add the chloroform, tincture of capsicum, and oil of coriander, first mixed with 2 fluidrams of alcohol, and finally add, if necessary, enough diluted alcohol to make 16 fluidounces.—Brit. Form.

According to American ideas, a better product could be obtained by macerating the finely cut senna with 12 fluidounces of alcohol for 24 hours, expressing, drying, extracting by percolation with diluted alcohol, dissolving the sugar in the liquid by agitation or percolation, and to the solution adding the chloroform and oil first dissolved in the alcohol.

Elixir of Senna, Compound.

Fluid extract of senna. fl. oz. 2
Purified tamarind pulp. av. oz. 4
Oil of coriander. drops 12
Alcohol. fl. dr. 2
Simple elixir, enough to make. . fl. oz. 16

Dissolve the oil in the alcohol, add to the fluid extract and pulp, then add the elixir.

Elixir of Senna and Buckthorn.

Refer to Elixir of Buckthorn and its combinations.

Elixir of Senna, Magnesia and Rhubarb.**Elixir of Senna and Rhubarb.**

Refer to Elixir of Rhubarb and its combinations.

Elixir of Sodium Bromide.

Refer to the Elixirs of Bromides.

Elixir of Sodium Bromide and Lupulin.

Refer to Elixir of Lupulin and its combinations.

Elixir of Sodium Hypophosphite.

Refer to Elixir of Hypophosphite of Sodium.

Other elixirs containing sodium hypophosphite may be found with Elixir of Calcium Hypophosphite and its combinations, and with Elixirs of the Hypophosphites.

Elixir of Sodium Salicylate.

Sodium salicylate. gr. 640
Aromatic elixir, enough to make fl. oz. 16

Dissolve the sodium salicylate in elixir, by agitation, and filter, if necessary.

Each fluidram contains 5 gr. of sodium salicylate.—N. F.

Elixir of Sodium Salicylate with Cascara Sagrada.

Refer to Elixir of Cascara Sagrada and its combinations.

Elixir, Simple.

By a simple elixir is commonly understood a flavored and sweetened dilute alcohol, intended as a vehicle for medicinal remedies, the flavoring agent being a volatile oil or combination of oils. The term may, however, include all such elixirs as are employed as vehicles, although these may be something more than a flavored and sweetened dilute alcohol.

If the second definition holds good, then the following elixirs, which have already been mentioned, will come under the head of simple elixirs: Elixir of orange, elixir of cherries, aromatic elixir, compound elixir of taraxacum, elixir de Garus, elixir of anise and adjuvant elixir.

Whenever simple elixir is mentioned, as an ingredient of a preparation in this formula, some one of the elixirs that are prepared by simply flavoring and sweetening dilute alcohol should be selected, such a one as will best disguise the taste of the medicament; at times it will, of course, be found necessary or advantageous to employ one of the others, like compound elixir of taraxacum, elixir of cherries, etc. In case there be no preference whatever, the aromatic elixir of the pharmacopœia should be used.

It is suggested that a finer product will always be obtained by using deodorized alcohol instead of ordinary alcohol; also that no volatile oil be used which is not only perfectly pure, but also perfectly fresh.

Formulas for making other simple elixirs are the following:

I.

Oil of orange.....	f.dr.	½
Oil of cinnamon.....	drops	5
Oil of anise.....	drops	2
Oil of bitter almond.....	drops	1
Tincture of cardamom.....	f.dr.	5
Alcohol.....	f.oz.	16¾
Water.....	f.oz.	36
Sugar.....	av.oz.	26
Cacao (Baker's).....	gr.	240
Magnesium carbonate.....	gr.	480

Mix the oils, tincture and alcohol, and triturate with the cacao and magnesium carbonate, having first mixed the latter intimately; transfer the mixture to a bottle, add the water gradually, agitate occasionally for several hours, filter, express the filter between muslin, filter the expressed liquid, mix the two filtrates, in the liquid dissolve the sugar by agitation, and filter or strain as may be necessary.

II.

Oil of orange (fresh).....	m.	48
Oil of lemon.....	drops	12
Oil of coriander.....	drops	8
Tincture of vanilla.....	f.oz.	1
Tincture cardamom.....	f.oz.	1
Powdered chocolate (Baker's).....	gr.	480
Alcohol.....	f.oz.	16
Simple syrup.....	f.oz.	24
Water (filtered through charcoal) enough to make.....	f.oz.	64

Dissolve the oils in 4 fluidounces of alcohol, add 12 fluidounces water and the remainder of the alcohol, and shake well. Dis-

solve the chocolate in 8 fluidounces of hot water, add the syrup, shake well, add the tinctures of cardamom and vanilla, and enough water to make 64 fluidounces. Filter through paper, on which about ½ av. ounce of talcum has been distributed; return the first part until the filtrate is clear.

III.

Oil of orange.....	m.	70
Alcohol.....	f.oz.	27½
Purified talcum.....	gr.	120
Orange flower water.....	f.oz.	18½
Simple syrup.....	f.oz.	18½

Mix the oil and alcohol, add the talcum, shake well, add the other ingredients, shake again, and filter.

IV.

Tincture of fresh orange peel.....	f.oz.	12
Tincture of fresh lemon peel.....	f.oz.	4
Alcohol.....	f.oz.	8
Orange flower water.....	f.oz.	8
Purified talcum.....	av.oz.	2
Simple syrup.....	f.oz.	82

Mix the whole well and filter.

This and the preceding have been known as elixir of orange.

V.

Oil of sweet orange.....	f.oz.	1½
Oil of caraway.....	drops	20
Alcohol.....	f.oz.	14½
Spirit of cinnamon.....	drops	32
Simple syrup.....	f.oz.	86
Glycerin.....	f.oz.	8
Distilled water.....	f.oz.	4
Calcium phosphate.....	av.oz.	1½

Mix the oils and alcohol, add the calcium phosphate, shake well, add the other ingredients, shake again, and filter.

VI.

Oil of orange.....	f.dr.	2½
Oil of Ceylon cinnamon.....	drops	3
Oil of anise.....	drops	3
Oil of caraway.....	drops	6
Tincture of vanilla.....	f.dr.	9
Simple syrup.....	f.oz.	26
Sherry wine.....	f.oz.	3
Alcohol.....	f.oz.	12½
Water.....	f.oz.	23
Purified talcum.....	av.oz.	1

Mix the oils with the talcum; mix the alcohol, wine and water, add to the mixture of talcum and oils, then add the vanilla and the syrup; let stand one hour, shaking often, and filter.

VII.

Soluble saccharin.....	gr. 24
Oil of anise.....	m. 160
Alcohol.....	fl.oz. 16
Distilled water, enough to make.....	fl.oz. 64

Dissolve the saccharin in 40 fluidounces of water, add the oil of anise, previously dissolved in 16 fluidounces of alcohol, and the remainder of the water. Add 1 av.ounce of purified talcum; let stand 24 hours, occasionally shaking, and filter.

VIII.

Cinnamon water.....	fl.oz. 24
Simple syrup.....	fl.oz. 24
Alcohol.....	fl.oz. 16
Spirit of orange.....	fl.oz. 2

This may be clarified by shaking with paper pulp or purified talcum, and filtering. The pulp can be made by beating $\frac{1}{4}$ av.ounce filter paper in a mortar with sufficient water just to moisten it.

IX.

Ceylon cinnamon.....	gr. 90
Star anise.....	gr. 60
Coriander.....	gr. 90
Nutmeg.....	gr. 80
Caraway.....	gr. 90
Oil of sweet orange.....	fl.dr. $\frac{1}{2}$
Diluted alcohol.....	sufficient
Simple syrup.....	fl.oz. 32

Percolate the aromatics, previously reduced to coarse powder, with diluted alcohol previously mixed with the oil of orange, continuing the percolation until 32 fluidounces of aromatic tincture are obtained, and mix with the syrup, filtering through talcum, if necessary.

X. Oil of sweet orange.....	fl.dr. 2
Oil of caraway.....	fl.dr. 1
Oil of coriander.....	m. 40
Oil of cassia.....	m. 40
Alcohol.....	fl.oz. 16
Water.....	fl.oz. 86
Sugar.....	fl.oz. 18
Purified talcum.....	av.oz. 1

Mix the oils with the alcohol, add the water and sugar, shake till latter is dissolved, add the talcum, shake again, and filter.

XI.

Oil of orange.....	fl.dr. 1
Oil of Ceylon cinnamon.....	drops 20
Alcohol.....	fl.oz. 12
Simple syrup.....	fl.oz. 25
Distilled water.....	fl.oz. 27

Dissolve the oils in the alcohol, add the syrup to this solution until a milkiness or

slight precipitation of oil is produced, then pour the mixture into the remaining syrup, constantly stirring during the whole process and filter, using paper pulp or purified talcum, if necessary, to clarify.

XII.

Orange flower water.....	fl.oz. 32
Bitter almond water.....	fl.oz. 8
Simple syrup.....	fl.oz. 8
Glycerin.....	fl.oz. 8
Alcohol.....	fl.oz. 8

Mix all and filter through purified talcum.

Elixir of Stillingia.

Fluid extract of stillingia.....	fl.oz. 2
Alcohol.....	fl.dr. 4
Simple elixir, enough to make.....	fl.oz. 16

Mix the fluid extract and alcohol, add the elixir, and filter through purified talcum.

Each fluidram represents $7\frac{1}{2}$ gr. of stillingia.

Elixir of Stillingia, Compound.

I.

Compound fluid extract of stillingia.....	fl.oz. 4
Aromatic elixir.....	fl.oz. 12

Mix them, allow the mixture to stand a few days, or longer, if convenient, and filter.

Each fluidram represents 15 m. of compound fluid extract of stillingia.—N. F.

II.

Compound fluid extract of stillingia.....	fl.oz. 2
Alcohol.....	fl.oz. 2
Compound elixir of taraxacum.....	fl.oz. 2
Simple elixir.....	fl.oz. 10

Mix the fluid extract and alcohol, add the elixirs, and filter through talcum.

Elixir of Strychnine Valerianate.

Strychnine valerianate.....	gr. $1\frac{1}{2}$
Acetic acid.....	sufficient
Tincture of vanilla.....	fl.dr. 2
Compound tincture of cudbear.....	fl.dr. 2
Aromatic elixir, enough to make.....	fl.oz. 16

Triturate the strychnine valerianate with about 1 fluidounce of aromatic elixir, gradually added, and effect complete solution by the addition of 1 or more drops of acetic acid, avoiding an excess. Then add the tinctures, and lastly, the remainder of the aromatic elixir. Filter, if necessary.

Each fluidram contains 1-100 gr. of strychnine valerianate.—N. F.

Elixir of Sumbul. (Elixir of Musk Root.)

Fluid extract of sumbul.....	f.oz.	2½
Alcohol.....	f.oz.	1
Adjuvant elixir.....	f.oz.	12½
Purified talcum.....	av.oz.	½

Triturate the fluid extract with the talcum, add the alcohol and elixir, and filter.

Each fluidram represents about 10 gr. of sumbul.

Elixir of Sumbul, Compound.

I.

Fluid extract of sumbul.....	f.oz.	2
Fluid extract of scullcap.....	f.dr.	4
Fluid extract of valerian.....	f.dr.	1
Alcohol.....	f.oz.	1
Adjuvant elixir, enough to make.....	f.oz.	16
Purified talcum.....	av.oz.	½

Mix the fluid extracts and alcohol, add the talcum, shake well, then add the elixir, shake again, and filter.

Each fluidram represents 7½ gr. of sumbul, about 2 gr. of scullcap, and about ½ gr. of valerian.

II.

Fluid extract of sumbul.....	f.oz.	2
Alcohol.....	f.oz.	1
Elixir of ammonium valerianate.....	f.oz.	8
Simple elixir.....	f.oz.	5

Mix the fluid extract and alcohol, add the two elixirs, and filter through talcum.

Each fluidram contains 1 gr. of ammonium valerianate and represents 7½ gr. of sumbul.

These two mixtures are quite dissimilar, but both are dispensed under the name "compound tincture of sumbul."

Elixir of Sumbul and Ammonium Valerianate.

Refer to Elixir of Ammonium Valerianate and its combinations.

By way of comparison, refer also to the formula immediately preceding.

Elixir of Tar.

Glycerite of tar.....	f.oz.	4
Elixir of cherries.....	f.oz.	12

Each fluidram represents nearly 1 gr. of tar.

Elixir of Tar, Compound.

Syrup of wild cherry.....	f.oz.	3½
Syrup of tolu.....	f.oz.	3½
Morphine sulphate.....	gr.	2½
Methylic alcohol.....	f.dr.	6
Distilled water, hot.....	f.dr.	1
Wine of tar, enough to make.....	f.oz.	16

Dissolve the morphine sulphate in the water, add the solution to the two syrups previously mixed, then add the methylic alcohol and the wine of tar.

Each fluidram contains 1-50 gr. of morphine sulphate.—N. F.

Most of the methyl alcohol of the market is very impure; the above requires an absolutely pure article.

Elixir of Tar with Calcium and Sodium Hypophosphites.

Refer to Elixir of Calcium Hypophosphite and its combinations.

Elixir of Terpin Hydrate.

Terpin hydrate.....	gr.	128
Glycerin.....	f.oz.	1
Alcohol.....	f.oz.	2
Simple elixir, enough to make.....	f.oz.	16

Each fluidram contains 1 gr. of terpin hydrate.

Elixirs Containing Valerianate of Ammonium.

All elixirs containing valerianate of ammonium may be found under the head of Elixir of Ammonium Valerianate.

Elixir of Valerianate of Iron.

Refer for this to Elixir of Iron combinations.

Elixir of Valerianates of Iron, Quinine and Zinc.—(Elixir of Triple Valerianates.)

Iron valerianate.....	gr.	64
Quinine valerianate.....	gr.	64
Zinc valerianate.....	gr.	64
Tincture of cudbear.....	f.dr.	2
Valerianic acid.....	sufficient	
Simple elixir, enough to make.....	f.oz.	16

Triturate the 3 valerianates with 8 fluid-ounces of elixir to a smooth paste, add, if necessary, a very small amount of the acid, just enough to dissolve the salts, then add the tincture and the remainder of the elixir, and filter.

If too much valerianic acid has been added so that it is betrayed by its odor, it should be exactly neutralized by stirring with a glass rod repeatedly dipped in dilute ammonia water.

Each fluidram contains ½ gr. each of the valerianates of iron, quinine and zinc.

Elixir of Valerianate of Morphine.

Refer to the Elixirs of Morphine combinations.

Elixir of Valerianate of Quinine.**Elixir of Valerianate of Quinine and Strychnine.**

Refer to Elixir of Quinine and its combinations.

Elixir of Valerianate of Zinc.

Zinc valerianate.....	gr. 128
Stronger solution of ammonium citrate.....	f. dr. 12½
Alcohol.....	f. oz. 2
Spirit of bitter almond.....	f. dr. 1½
Compound tincture of cudbear.....	f. dr. 2
Aromatic elixir, enough to make.....	f. oz. 16

Mix the stronger solution of ammonium citrate with 4 fluidounces of aromatic elixir and the alcohol, and triturate the zinc valerianate with this mixture, added gradually and in portions, until solution has been effected. Then add the spirit tincture, and the remainder of the aromatic elixir. Allow the mixture to stand a few days, and filter.

Each fluidram contains 1 gr. of zinc valerianate.—N. F.

Elixir of Wafer Ash. (Elixir of Ptelea.)

Fluid extract of wafer ash.....	f. oz. 2¾
Simple elixir, enough to make.....	f. oz. 16

Mix, and allow to stand for about 24 hours, then filter through purified talcum.

Each fluidram represents 10 gr. of wafer ash.

Elixir of Wafer Ash, Bismuth and Pepsin.

Refer to Elixir of Bismuth and its combinations.

Elixir of Wafer Ash and Pepsin.

Refer to Elixir of Pepsin and its combinations.

Elixir of Wahoo. (Elixir of Euonymus.)

Fluid extract of wahoo.....	f. oz. 2½
Water.....	f. oz. 2
Syrup of coffee.....	f. oz. 2
Compound elixir of taraxacum.....	f. oz. 9½

Mix them, let the mixture stand 48 hours, and filter.

Each fluidram represents about 9½ gr. of wahoo.—N. F.

Elixir of Wahoo and Blue Flag.

Refer to Elixir of Blue Flag and its combinations.

Elixir of Wild Cherry.

Fluid extract of wild cherry.....	f. oz. 4
Alcohol.....	f. oz. 1
Simple elixir.....	f. oz. 11

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluidram represents 15 gr. of wild cherry.

Elixir of Wild Cherry and Iron.

Refer to Elixir of Iron and its combinations.

Elixir of Yerba Santa. (Elixir of Eriodictyon.)

Fluid extract of yerba santa.....	f. oz. 2
Pumice stone, powdered.....	av. oz. 1
Alcohol.....	f. oz. 1
Simple elixir, enough to make.....	f. oz. 16

Triturate the fluid extract with the pumice stone until well mixed, add the alcohol, mix again, then add 18 fluidounces of elixir, mix once more, let the whole stand for several hours, stirring occasionally, then filter, returning the first portions of filtrate to the filter until the liquid is clear, and finally adding enough simple elixir through the filter until the filtrate measures the requisite amount.

Each fluidram represents 7½ gr. of yerba santa.

Elixir of Yerba Santa, Aromatic.

(Elixir Corrigen.)

I. Fluid extract of yerba santa.....	f. oz. 1
Simple syrup.....	f. oz. 8
Pumice, fine powder.....	gr. 240
Magnesium carbonate.....	gr. 80
Compound elixir of taraxacum, enough to make.....	f. oz. 16

Mix 7 fluidounces of compound elixir of taraxacum with the syrup and pumice, then add the fluid extract, and mix the whole thoroughly by agitation. Shake the mixture occasionally during 2 hours, then allow it to settle, and carefully decant the liquid into a funnel, the neck of which contains a small pellet of absorbent cotton. Afterwards add the dregs and allow them to drain. To the filtrate add the magnesium carbonate, and shake occasionally during several hours.

Let the mixture stand at rest during 12 hours, if convenient, then decant the liquid and filter it through paper. To the filtrate add enough compound elixir of taraxacum, if necessary, to make 16 fluidounces.—N. F.

II.

Yerba santa, coarse powder.....gr.	360
Sweet orange peel, recently dried and in coarse powder....gr.	120
Liquor potassa.....fl.dr.	1
Oil of cloves.....drops	4
Oil of cinnamon.....drops	4
Oil of caraway.....drops	2
Oil of coriander.....drop	1
Compound tincture of cardamom.....fl.dr.	1
Sugar.....av.oz.	7
Glycerin,	
Water,	
Alcohol.....of each, sufficient	

Mix the oils and tincture with the drugs and extract by percolation in the usual way, employing as a menstruum a mixture of 1 part of alcohol, 1 of glycerin, and 8 of water, all by measure, with 1 per cent of liquor potassa, 10 fluidounces of percolate are to be obtained, which is to be returned to the percolator if not clear; to this add the remainder of the liquor potassa and 2 fluidounces of alcohol, and in the whole dissolve the sugar by agitation.

III.

Yerba santa.....av.oz.	1
Sweet orange peel.....gr.	144
Cardamom (without capsule)....gr.	28
Cloves.....gr.	28
Cinnamon.....gr.	28
Anise.....gr.	20
Coriander.....gr.	20
Caraway.....gr.	20
Red saunders.....gr.	10
Sugar.....av. oz.	7
Alcohol,	
Glycerin	
Distilled water.....of each, sufficient	

Mix the drugs, reduce to moderately coarse powder, extract by percolation with a menstruum composed of 1 part of alcohol, 1 of glycerin, and 8 of water, all by measure, until 12 fluidounces of percolate are obtained; in the latter, dissolve the sugar by agitation, and filter.

Elixir of Yerba Santa, Compound.

Fluid extract of yerba santa....fl.oz.	1
Fluid extract of grindelia.....fl.oz.	1
Alcohol.....fl.oz.	1
Pumice stone, powdered.....av.oz.	1
Simple elixir, enough to make...fl.oz.	16

Mix the fluid extracts, triturate with pumice stone, add 13 fluidounces of simple elixir, mix again, allow the whole to stand for several hours, stirring occasionally, and filter.

Each fluidram represents nearly 4 gr. each of yerba santa and grindelia.

Elixir of Zinc Bromide.

Refer to the Elixirs of the Bromides.

Elixir of Zinc Valerianate.**Elixir of Zinc, Iron and Quinine Valerianate.**

Refer for the above to the Elixirs of Valerianates.

Emulsion of Almond.

(Emulsion Amygdalæ.—Emulsio Amygdalarum Saccharata.—Almond Milk.—Mistura Amygdalæ—Simple Emulsion.)

I.

Sweet almond.....av.oz.	1
Acacia, fine powder.....gr.	72
Sugar.....gr.	220
Distilled water, sufficient to make.....fl.oz.	16

Blanch the almonds with hot water, add the acacia and sugar, beat them in a mortar until thoroughly mixed, rub this mixture with 14 fluidounces of the water, gradually added, until a uniform mixture results, strain, and wash mortar and strainer with the remainder of the water.—U. S. P.

II.

Sweet almond.....gr.	360
Sugar.....gr.	360
Distilled water.....fl.oz.	16

Blanch almonds in the usual way, triturate with a little sugar, then with a little water gradually added, then slowly add the remainder of the water, mix well, strain with expression, and in the colature dissolve the remainder of the sugar.—Codex.

III.

Sweet almonds.....av.oz.	1½
Sugar.....av.oz.	1½
Distilled water.....sufficient	

From the almond prepare an emulsion in the usual manner, so as to obtain 15 fluidounces of emulsion, and in this dissolve the sugar.—Germ. Form.

IV.

Prepare like III, however triturating the almond to fine powder with 1 av. oz. of sugar, the remainder of the sugar to be dissolved in the colature.—Austr. Phar.

V.

The following is also called "emulsion of almond," but is also known as look album, white linctus, or white drink:

Sweet almond.....av.oz.	3½
Bitter almond.....gr.	90
Sugar, granulated.....av.oz.	3½
Tragacanth, fine powder.....gr.	24
Orange flower water.....fl.dr.	9
Distilled water.....fl.oz.	12

Make an emulsion with the almonds, 4 fluidounces of water, and nearly the whole of the sugar, and strain. Triturate the tragacanth with the rest of the sugar, then add small portion of the emulsion, and triturate briskly and for a long time, until well mixed; then add the remainder of the emulsion in small portions, while continuing the trituration, and finally add the orange flower water.

Emulsion of Almond, Compound.

(Compound Almond Milk.)

Sweet almond, blanched.....av.oz.	1½
Henbane seed.....gr.	144
Calcined magnesia.....gr.	144
Sugar, moderately fine powd., av.oz.	1½
Bitter almond water.....fl.oz.	1½
Water.....fl.oz.	18½

From the sweet almond and henbane seeds, prepare an emulsion with the water, strain, add the bitter almond water, mix the magnesia and sugar, mix this emulsion, and shake until the sugar is dissolved.—Germ. Form.

Emulsion of Almond Oil.

(Oil Emulsion.—Emulsio Oleosa.)

The following is generally dispensed as simple emulsion:

Sweet almond oil.....fl.oz.	1¾
Gum arabic, powder.....gr.	360
Distilled water.....fl.oz.	13¾

Make an emulsion in the usual manner.—Germ. Pharm.

Emulsion, Camphorated.

(Emulsio Camphorata.)

I.

Camphor.....gr.	15
Acacia powder.....gr.	72
Sugar.....av.oz.	1½
Emulsion of almonds.....fl.oz.	16
Alcohol.....fl.dr.	1

Add the alcohol to the camphor contained in a mortar and reduce to fine powder; now add the acacia, and then the sugar, finally

the emulsion of almonds, and mix the whole well.—H.

II.

Sweet almond.....av.oz.	1¾
Sugar.....av.oz.	1¾
Camphor water.....fl.oz.	14

Blanch the almond, make into an emulsion with the water, strain, and in the colature dissolve the sugar.—D.

Emulsion of Monobromated Camphor.

Monobromated Camphor.....gr.	150
Sweet almond oil.....fl.oz.	2¾
Gum arabic, powder.....gr.	225
Distilled water.....	sufficient

Dissolve the camphor compound in the oil, add the gum, and 2½ fluidounces of water, triturate until an emulsion is formed, and then add enough water to make 16 fluidounces.—D.

Emulsion of Castor Oil.

I.

Castor oil.....av.oz.	5½
Acacia, fine powder.....gr.	585
Tincture of vanilla.....fl.dr.	3
Simple syrup.....fl.oz.	8
Water.....	sufficient

Carefully weigh the castor oil and the acacia into a mortar, triturate until well mixed; then add 2 fluidounces of water all at once to the mixture of oil and acacia, triturating briskly until a thick, creamy emulsion is produced. To this add gradually with stirring, a mixture of the syrup and tincture with a portion of the remaining water, and finally enough water to make 16 fluidounces.—N. F.

II.

Castor oil.....fl.oz.	11
Egg yolk.....fl.oz.	2
Syrup.....fl.oz.	8
Oil of cassia.....fl.dr.	1½

Beat the yolk thoroughly in a mortar, add the two oils, triturate until emulsified, and finally add the syrup.

Emulsion of Cod Liver Oil.

Emulsions of fixed oils may be prepared by the use of a number of emulsifying agents, such as acacia, tragacanth, extract of malt, yolk of egg, glycerite of yolk of egg, condensed milk, mucilage of Irish moss, tincture of quillaja, and dextrin.

In preparing an emulsion of cod liver oil,

any of these may be employed; The National Formulary recognizes five emulsions of cod liver oil made with mucilage of Irish moss, acacia, glycerite of yolk of egg, tincture of quillaja, tragacanth, and dextrin mucilage. These emulsions may be plain; that is, may consist simply of oil, emulsifier, water, sugar and flavoring, or they may be combined with other agents, such as hypophosphites, phosphates, lactophosphates, phosphorus creosote, etc., or perhaps with two or more such agents. The method adopted in incorporating these medicaments varies according to its character; if it be soluble in the oil, it is added to the latter before emulsifying, and if soluble in water it is dissolved in the latter before it is added to the mixture of gum and oil. Should, however, the substance not be soluble in either the oil or water, then other methods still must be adopted; if it be solid in character, it should be triturated to a very fine powder and be added to the emulsion; if it be an alcoholic liquid, like tincture of benzoin or spirit of nitrous ether, it is generally best to add it to the emulsion after all the water has been added.

Emulsions of cod liver oil usually require flavoring, and this consists most frequently in the addition of a volatile, like cassia, wintergreen, bitter almonds, sassafras, etc, which should be added to the cod liver oil, or it may consist of a flavored syrup like syrup of tolu, which should be incorporated with the emulsion after most of the water has been added. No objection can be made to using two or three flavoring agents.

The emulsions given here are made with the use of different emulsifying agents and different flavoring agents, but no one need be restricted to the use of such of either as may be mentioned.

I.

Cod liver oil	f℥.oz. 8
Acacia	av.oz. 2½
Syrup of tolu	f℥.dr. 12
Flavoring (of any desired kind)'	
Water,	of each, sufficient

Triturate the oil and acacia together in a mortar, add 3 fluidounces of water all at once to the mixture of oil and acacia, triturating briskly until a thick, creamy emulsion is produced. To this add the desired flavoring,

the syrup of tolu, and enough water to make 16 fluidounces of finished emulsion.—N.F. (preferred formula.)

II.

Cod liver oil	f℥.oz. 8
Condensed milk, thick	av.oz. 6
Oil of sassafras	drops 10
Oil of wintergreen	drops 10
Oil of bitter almond	drops 2
Glycerin	f℥.oz. 1
Water, enough to make	f℥.oz. 16

Add the cod liver oil gradually to the condensed milk, then incorporate the other oils, 1 fluidounce of water, the glycerin, and the remainder of the water.

III.

Cod liver oil	f℥.oz. 8
Yolk of two eggs.	
Tragacanth, powdered	gr. 16
Elixir of saccharin	f℥.dr. 1
Tincture of benzoin	f℥.dr. 1
Spirit of chloroform	f℥.dr. 4
Oil of bitter almond	drops 8
Distilled water, enough to make f℥.oz. 16	

Measure 5 fluidounces of distilled water, place the powdered tragacanth in a dry mortar, and triturate with a little of the cod liver oil; then add the yolks of eggs and stir briskly, adding water as the mixture thickens. When of a suitable consistence, add the remainder of the oil and water alternately, with constant stirring, avoiding frothing. Transfer to a pint bottle, add the elixir of saccharin, tincture of benzoin, spirit of chloroform, and oil of almonds, previously mixed, shake well, and add distilled water, if necessary, to make 16 fluidounces.—Brit. Form.

Instead of the elixir of saccharin, the liquor saccharini of the National Formulary may be employed.

IV.

The emulsions of cod liver oil with malt extract are considered under the head of Extract of Malt and its combinations.

Emulsion of Cod Liver Oil, Stronger,

Cod liver oil	f℥.oz. 8
Acacia, fine powder	av.oz. 1¾
Glycerin	f℥.oz. 1
Sugar	gr. 480
Water, enough to make	f℥.oz. 14

Mix the acacia with 2 fluidounces of water, and make an emulsion with this and 6 fluidounces of oil. Now add the sugar and af

terwards incorporate with this emulsion alternate portions of the glycerin and the remainder of the water and oil.

This is a stock emulsion (without flavor) to be used for preparing the usual 50 per cent simple emulsion of cod liver oil, or compound emulsions containing such additions as may be desired.

It is advisable to keep this emulsion in the bottles in which the emulsions are usually dispensed, 7 fluidounces in an 8-ounce bottle, 14 fluidounces in a 16-ounce bottle, etc. Whenever an emulsion of cod liver oil, simple compound, is wanted it can then frequently be prepared by simple addition of the requisite ingredients.

Emulsion of Cod Liver Oil with Coca.

- I.
Stronger emulsion of cod liver oil fl.oz. 14
Elixir of coca.....fl.oz. 2
Oil of cloves.....drops 24
Each half fluidounce represents nearly 4 gr. of coca.

II.

Prepare an emulsion like any of those mentioned under Emulsion of Cod Liver Oil, replacing 2 fluidounces of water by elixir of coca.

Emulsion of Cod Liver Oil with Creosote and Hypophosphites.

Cod liver oil.....	fl.oz.	8
Creosote, pure.....	fl.dr.	1½
Acacia powder.....	av.oz.	2½
Glycerin.....	fl.oz.	1
Syrup of orange.....	fl.dr.	4
Calcium hypophosphite.....	gr.	128
Sodium hypophosphite.....	gr.	128
Oil of wintergreen.....	fl.dr.	½
Oil of sassafras.....	fl.dr.	½
Oil of cinnamon.....	fl.dr.	½
Distilled water, enough to make	fl.oz.	16

Mix the cod liver oil, creosote, and essential oils, with the acacia, in a dry mortar; dissolve the hypophosphites in 3 fluidounces of warm water, pour the solution, all at once, into the mixture of oils, creosote, and acacia, and stir briskly in one direction with the pestle until emulsification takes place; then add the glycerin, syrup, and enough water to make 16 fluidounces, and strain through a cloth.

Emulsion of Cod Liver Oil with Hypophosphites.

- I.
Cod liver oil.....fl.oz. 8
Acacia, fine powder.....av.oz. 2½
Soluble hypophosphite, (calcium, sodium, or potassium).....gr. 128
Syrup of tolu.....fl.oz. 1½
Flavoring (whatever kind may be desired),
Water.....of each, sufficient

Emulsify the oil with the acacia and 3 fluidounces of water, and add the flavoring. Then dissolve the hypophosphite in sufficient water, mix this solution with the syrup, and add the mixture gradually to the emulsified oil; lastly, add enough water to make 16 fluidounces, and mix the whole thoroughly.

If several hypophosphites are required, equal parts of them may be used, amounting altogether to 128 gr. for the above formula. Varying quantities, larger or smaller than the above, may, of course, be used upon prescription.—N. F.

II.

Calcium hypophosphite.....	gr.	64
Sodium hypophosphite.....	gr.	64
Potassium hypophosphite.....	gr.	82
Water, hot.....	fl.oz.	2
Stronger emulsion of cod liver oil	fl.oz.	14

Dissolve the hypophosphites in the water and add to the emulsion. Flavor as desired.

Instead of the stronger emulsion in this formula, a 50 per cent emulsion may be used. Or the simple emulsion may be prepared in any desired manner, dissolving the hypophosphites in a portion of the water.

Emulsion of Cod Liver Oil with Hypophosphite of Calcium.

Prepare like any of the preceding, using 128 gr. of calcium hypophosphite to every 16 fluidounces of emulsion.

Emulsion of Cod Liver Oil with Lactophosphate of Calcium.

Cod liver oil.....	fl.oz.	8
Acacia, fine powder.....	av.oz.	2½
Calcium lactate.....	gr.	256
Phosphoric acid (U. S. P., 85 per cent).....	fl.dr.	1½
Syrup of tolu.....	fl.oz.	1½
Flavoring (of any desired kind), Water.....	of each, sufficient	

Emulsify the oil with the acacia, and 3

fluidounces of water, and add the flavoring. Then dissolve the calcium lactate in 1 fluidounce of water with the aid of the phosphoric acid, add the solution gradually to the emulsified oil, then the syrup, and lastly enough water to make 16 fluidounces. Mix the whole thoroughly.

This emulsion should be freshly prepared when dispensed.—N. F.

Emulsion of Cod Liver Oil with Malt Extract.

Refer for this to Extract of Malt and its combinations.

Emulsion of Cod Liver Oil with Phosphate of Calcium.

Cod liver oil.....f.oz. 8
Acacia, fine powder.....av.oz. 2½
Calcium phosphate.....gr. 256
Syrup of tolu,
Flavoring (of any desired kind),
Water.....of each, sufficient

Emulsify the oil with the acacia, and 8 fluidounces of water, and add the flavoring. Then triturate the calcium phosphate with the syrup and a portion of the remaining water, add the mixture gradually to the emulsified oil, and lastly, enough water to make 16 fluidounces. Mix the whole thoroughly.—N. F.

Emulsion of Cod Liver Oil with Phosphates of Calcium and Sodium.

Cod liver oil.....f.oz. 8
Acacia, fine powder.....av.oz. 2½
Calcium phosphate.....gr. 128
Sodium phosphate.....gr. 128
Syrup of tolu.....f.oz. 1½
Flavoring (of any desired kind)
Water.....of each, sufficient

Emulsify the oil with the acacia, and 8 fluidounces of water, and add the flavoring. Then triturate the salts to a fine powder, incorporate with the syrup and a portion of the remaining water, and triturate with the emulsified oil. Finally, add enough water to make 16 fluidounces, and mix the whole thoroughly together.—N. F.

Emulsion of Cod Liver Oil with Phosphate of Sodium.

Every 16 fluidounces should contain 128 gr. of sodium phosphate. This should be dissolved in 2 fluidounces of water which may be added to 14 fluidounces of either simple

or stronger emulsion of cod liver oil, or the solution may be incorporated during the process of emulsification in making an emulsion of cod liver oil.

Emulsion of Cod Liver Oil, Phosphorated. (Phosphatic Emulsion.—Phosphatic Mixture.)

Cod liver oil.....f.oz. 4
Glycerite of yolk of egg (U. S. P.).....av.oz. 3
Diluted phosphoric acid.....f.dr. 6
Oil of bitter almond.....drops 10
Rum, Jamaica.....f.oz. 4
Orange flower water, enough
to make.....f.oz. 16

To the glycerite of yolk of egg contained in a suitable bottle, gradually add the cod liver oil, in small portions at a time, shaking after each addition, until the added portion is emulsified. Then gradually add the phosphoric acid, rum and oil of bitter almond, incorporating them thoroughly. Finally, add the orange flower water and mix the whole thoroughly.

Emulsion of Cod Liver Oil with Wild Cherry.

Cod liver oil.....f.oz. 8
Acacia, fine powder.....av.oz. 2½
Fluid extract of wild cherry.....f.oz. 1
Syrup of tolu.....f.oz. 1½
Flavoring (of any desired kind),
Water.....of each, sufficient

Emulsify the oil with the acacia and 3 fluidounces of water, and add the flavoring. Mix the fluid extract and syrup with a portion of the remaining water, and add the mixture gradually to the emulsified oil. Lastly, add enough water to make 16 fluidounces and mix the whole thoroughly.—N. F.

Emulsion of Linseed Oil, Dr. Thomson's.

Linseed oil.....f.oz. 3¼
Oil of wintergreen.....f.dr. ½
Oil of cinnamon.....f.dr. ½
Acacia, powder.....av.oz. 2
Water.....f.oz. 6
Glycerin.....f.oz. 1½
Simple syrup.....f.oz. 2½
Hydrocyanic acid, dilute.....m. 40

Triturate the mixed oils with the acacia, add 3 fluidounces of water, triturate until emulsified, add the syrup, glycerin, acid, and remainder of the syrup and mix well.

Emulsion of Phosphorus. (Phosphorated Emulsion.)

Phosphorated oil.....	f.dr.	7
Acacia, powder.....	gr.	240
Distilled water.....	f.dr.	5
Peppermint water.....	f.oz.	13
Simple syrup.....	f.dr.	10

Mix the oil and gum in a dry mortar, emulsify by addition of the water, then add the peppermint water and the syrup, and mix well.—D.

Each fluidram represents about 1-30 gr. of phosphorus.

Emulsion of Paraffin Oil and Hypophosphites. (Compound Emulsion of Liquid Petrolatum.)

I.	Paraffin oil (liquid petrolatum).....	f.oz.	5½
	Acacia, powder.....	av.oz.	2½
	Glycerin.....	f.oz.	1½
	Calcium hypophosphite.....	gr.	96
	Sodium hypophosphite.....	gr.	96
	Water, enough to make.....	f.oz.	16

Add the acacia to the oil and mix thoroughly (in a large mortar), then add 5 fluidounces of water (all at once) and rub briskly until the emulsion is formed. Dissolve the hypophosphites in 3 fluidounces of water, to which add the glycerin; then add all the emulsion and rub well together—and any water necessary to make up the measure of 16 fluidounces of finished product.

II.	Liquid petrolatum.....	f.oz.	4
	Oil of sweet almonds.....	f.oz.	2
	Acacia, powder.....	av.oz.	1¾
	Glycerin.....	f.oz.	1½
	Sodium hypophosphite.....	gr.	128
	Calcium hypophosphite.....	gr.	128
	Lime water.....	f.oz.	8

Mix all the oil and petrolatum and incorporate well with the gum, then add 3 fluidounces of the water all at once, stir briskly until an emulsion is formed; dissolve the hypophosphites in 3 fluidounces of the lime water, mix with the preceding liquid, and then add the glycerin.

These preparations may be flavored in any suitable manner.

Emulsion of Resorcin.

Resorcin.....	gr.	80
Emulsion of almond.....	f.oz.	13½
Syrup of orange.....	f.oz.	2½

Dissolve the resorcin in the emulsion and add the syrup.—D.

Emulsion of Salicylic Acid. (Emulsion Salicylica.)

Salicylic acid.....	gr.	170
Oil of sweet almond.....	f.oz.	2¾
Acacia, powder.....	av.oz.	1½
Orange flower water.....	f.oz.	2½
Water.....	f.oz.	9
Simple syrup.....	f.oz.	1¾

Mix the salicylic acid and oil, add the gum, and to this mixture add all the orange flower water, stirring briskly until emulsification is complete; then add the water and finally the syrup.—D.

This forms about a 2 per cent emulsion of salicylic acid.

Emulsion of Terpin Hydrate.

Terpin hydrate.....	gr.	256
Olive oil.....	f.oz.	4
Acacia, powder.....	av.oz.	2½
Syrup of cinnamon.....	f.oz.	4
Cinnamon water, enough to make.....	f.oz.	16

Reduce the terpin hydrate (with the intervention of a little sugar, if necessary) to a fine powder, triturate first with the acacia and then with the oil, and then add, all at once, 2 fluidounces of cinnamon water. When the emulsion is complete, incorporate the syrup, finally adding the required amount of cinnamon water.

Emulsion of Spermaceti.

Spermaceti.....	gr.	256
Acacia, powder.....	gr.	50
Water.....	f.oz.	18½
Simple syrup.....	f.oz.	2½

Put the syrup and gum into a warm mortar, add the spermaceti and triturate with a warm pestle until united; then add the warm water gradually, and continue agitation or trituration until the whole is cold.

Emulsion of Wax.

This may be prepared like the emulsion of spermaceti, substituting yellow wax for the spermaceti, or by the use of the following method:

Yellow wax, filtered.....	av.oz.	1¾
Mucilage of acacia.....	f.oz.	5
Distilled water, warm.....	f.oz.	10

Melt the wax in a capacious mortar on a water bath or by any other suitable method, at the same time warming the pestle; to the wax add the mucilage, mix well until an emulsion is formed, then add the distilled water.—D.

Emulsion of Tolu Balsam.

Tolu balsam.....	gr. 144
Alcohol.....	fl.dr. 15
Tincture of quillaja.....	fl.dr. 18
Distilled water, hot.....	fl.oz. 12½

Dissolve the balsam in the alcohol, and add the tincture; then make an emulsion by adding the water gradually without constant agitation.—Codex.

Essences, Flavoring.

Flavoring essences of various kinds, such as for soda water, other beverages and for culinary purposes may be found in Part VI.

Essence of Pepsin.

I.

Pepsin, pure.....	gr. 128
Hydrochloric acid, dilute.....	drops. 5
Aromatic elixir.....	fl.oz. 8
Glycerin.....	fl.oz. 1
Water.....	fl.oz. 6
Angelica wine, enough to make.....	fl.oz. 16

Mix all, agitate frequently until the pepsin is dissolved, and filter through purified talcum.

II.

Pepsin, pure.....	gr. 240
Hydrochloric acid, dilute.....	fl.dr. 1
Glycerin.....	fl.oz. 1
Simple syrup.....	fl.oz. 2
Compound elixir of taraxacum.....	fl.oz. 1
Alcohol.....	fl.oz. 2
Oil of cloves.....	drops 1
Water.....	enough to make fl.oz. 16

Mix the pepsin, glycerin, acid and 8 fluid-ounces of water, agitate frequently until the pepsin is dissolved, then add the syrup, elixir, oil of cloves first dissolved in the alcohol, and the remainder of the water, and filter.

III.

Pepsin, pure.....	gr. 64
Simple elixir (U. S. P.).....	fl.oz. 1½
Glycerin.....	fl.oz. 1½
Catawba wine.....	fl.oz. 1
Angelica wine.....	fl.oz. 5
Water.....	enough to make fl.oz. 16

Mix, dissolve, and filter through calcium phosphate or purified talcum.

IV.

Fresh calves' rennet.....	av.oz. 3½
Glycerin.....	fl.oz. 8½
Alcohol.....	fl.dr. 14
Tincture of fresh orange peel.....	fl.dr. 1½
Water.....	fl.oz. 11½
Purified talcum.....	av.oz. 1

Mix the rennet and glycerin, then add the

alcohol, water and tincture of orange, and macerate for 4 or 5 days, with repeated agitation; add the talc, agitate and allow to stand for an hour, or until the talc has been largely deposited; now decant, on a muslin or flannel filter, the supernatant liquid first, and finally the dregs; then filter through paper.

V.

Pepsin, pure.....	gr. 128
Glycerin.....	fl.oz. 8½
Oil of cinnamon.....	drops 1
Oil of pimento.....	drops 1
Oil of cloves.....	drops 2
Hydrochloric acid.....	m. 20
Purified talcum.....	gr. 120
Alcohol.....	fl.dr. 4
Sherry wine (good and light color).....	fl.oz. 3½
Distilled water, enough to make.....	fl.oz. 16

Mix the wine with the acid and 6 fluid-ounces of water; add to it the pepsin and shake until dissolved; the oils are added to the alcohol, triturated with the talc, the pepsin solution gradually added and filtered; return the first portions until the filtrate is perfectly bright, and pass the remainder of water through filter; when every portion has passed, add to the filtrate the glycerin.

Essences, Perfume.

These may be found in Part V.

Essence of Saccharin.

Saccharin.....	gr. 150
Distilled water.....	fl.oz. 15
Sodium carbonate or bicarbonate.....	sufficient
Brandy.....	fl.oz. 1

Mix the saccharin with 8 fluidounces of the water, add the sodium salt gradually in small amounts, stirring thoroughly after each addition, until the saccharin is dissolved, then add the remainder of the water and the brandy, and filter. Any excess of soda must be carefully avoided.

This can be used for sweetening preparations of one kind or another instead of elixir or solution of saccharin. It is especially useful in sweetening the tea, coffee and other beverages of diabetic persons.—D.

Essence of Tamarinds.

Tamarind pulp, purified.....	av.oz. 8¾
Alexandria senna (previously extracted with alcohol).....	av.oz. 1½
Water, boiling.....	fl.oz. 40

Infuse for 12 hours, then strain, press the

marc, and evaporate the strained liquor by boiling to 19 av.ounces. Then take 11½ fluidounces of the residue, neutralize with solution of soda, and add:

Alcohol	fl.oz. 3½
Simple syrup	fl.oz. 1½
Tincture of vanilla	fl.dr. 1½

Etheroles.

These are a class of French preparations similar to the ethereal tinctures used to some extent in this country.

Extract of Aloes, Fluid.

What is commonly sold under this name is made by dissolving 8 av.ounces of aloes in 16 fluidounces of diluted alcohol by the aid of a moderate heat, straining, and evaporating the colature to 16 fluidounces.

To make the official tincture of aloes, it is directed to mix 1½ fluidounces of the above, and 8 fluidounces of fluid extract of licorice with enough diluted alcohol to make 16 fluidounces.

Extract of Aloes, Acid.

Aloes	av.oz. 4
Water, boiling	fl.oz. 20
Sulphuric acid, pure	fl.dr. 1
Distilled water, cold	fl.dr. 3

Pour the boiling water upon the aloes, stir well, allow to cool, add the acid previously mixed with the cold distilled water, set aside for 24 hours, decant the clear liquid, and evaporate the decantate to dry extract.

The yield is about 40 per cent.

This preparation may be made from the dried aqueous extract, but it is more convenient to begin with the crude drug.—D.

Extract of Aloes and Myrrh, Fluid.

This, like the fluid extract of aloes, is one of the "convenience" preparations put up by the large manufacturers. It may be prepared as follows:

Socotrine aloes	av.oz. 4½
Myrrh	av.oz. 4½
Alcohol	sufficient

Mix the drugs in coarse powder with 12 fluidounces of alcohol, macerate for 7 days in a warm place, occasionally agitating, then heat moderately on a water bath for 2 hours, strain through flannel, add through the strainer enough alcohol to make 16 fluidounces, and allow to cool.

To make the tincture of aloes and myrrh, the manufacturers direct that 5 fluidounces of this "fluid extract" be mixed with 11 fluidounces of alcohol. Inasmuch as the official preparation contains licorice, the tincture is not properly made unless 1½ fluidounces of the alcohol be replaced by fluid extract of licorice.

Extract of Alstonia Constricta, Fluid.

(Fluid Extract of Australian Fever Bark.)

Extract the drug in fine powder by the use of alcohol as a menstruum, using the process of the pharmacopœia or the National Formulary or any other suitable process of making fluid extracts.

Extract of Bamboo Brier, Compound

Fluid. (Alternative Compound.—McCade's Compound.—Creek Indian Remedy.—Mistura Smilacis Compositus.)

Bamboo brier root	av.oz. 4
Stillingia	av.oz. 4
Burdock root	av.oz. 4
Poke root	av.oz. 4
Prickly ash bark	av.oz. 1
Diluted alcohol	sufficient

Mix the drugs, reduce to fine powder, and extract, using diluted alcohol as a menstruum, by the process of the pharmacopœia, or the National Formulary or any other suitable process for fluid extracts, the product to measure 16 fluidounces.

Extract of Benzoin, Compound

Fluid.

Benzoin	av.oz. 4¼
Storax	av.oz. 8
Tolu balsam	av.oz. 2½
Aloes	gr. 850
Alcohol	sufficient

Reduce the benzoin and aloes to coarse powder, add these and the tolu and storax to 12 fluidounces of alcohol contained in a closed vessel, digest the mixture, at a temperature not exceeding 65 degs. C., for 2 hours, then strain through flannel, and wash the residue and strainer with enough alcohol to make the colature measure 16 fluidounces.

This is another "convenience" preparation from which the compound tincture of benzoin is directed to be prepared by mixing 6 fluidounces with 10 fluidounces of alcohol.

Extract of Benzoin, Fluid.

Benzoin, in coarse powder.....av.oz. 8½
Alcohol.....sufficient

Mix the benzoin with 12 fluidounces of alcohol, macerate the mixture in a warm place, then heat on a water bath until quite warm, strain through flannel, and wash the dregs and strainer with enough alcohol to make the colature measure 16 fluidounces.

This is similar to the "convenience" preparations put up by manufacturers. The tincture is directed to be prepared from it by mixing 6 fluidounces of it with 10 fluidounces of alcohol. It may also be used for making benzoinated lard and for benzoinating other fats and fatty bodies.

Extract of Berberis Aquifolium,

Fluid. (Fluid Extract of Oregon Grape.)

Reduce the drug to fine powder and extract by means of a mixture of alcohol and water in the proportion of 3 of the former to 2 of the latter, both by measure, using the process of the pharmacopœia, or the National Formulary, or any other suitable process for fluid extracts.

Extract of Blackberry Root Bark,

Compound Fluid.

Blackberry root bark.....av.oz. 12
Cinnamon.....av.oz. 1½
Nutmeg.....av.oz. 1½
Cloves.....av.oz. ¾
Allspice.....av.oz. ¾
Diluted alcohol.....sufficient

Mix the drugs, grind to fine powder, and extract, using diluted alcohol as a menstruum, by the process of the pharmacopœia, or National Formulary or any other suitable process for fluid extracts, the product to measure 16 fluidounces.

Other spices may be used instead of those in the above formula.

Such a preparation may be employed for making mild and pleasant carminative elixirs, syrups, "balsams," etc., for summer complaint, dysentery, etc. The above may be converted into the aromatic syrup of blackberry (N. F.) by mixing 1 fluidounce with 5 of diluted alcohol, 11 fluidounces of blackberry juice, and 16 av.ounces of sugar, agitating until dissolved and straining. A

syrup without juice may be prepared by mixing 1 fluidounce of fluid extract, 5 of diluted alcohol and 20 of simple syrup.

Extract of Bittersweet. (Extract of Dulcamara.)

Dulcamara, coarse powder....av.oz. 4
Distilled water.....fl.oz. 24

Mix the drug with 16 fluidounces of water, macerate for 24 hours, strain with expression, upon the residue pour 8 fluidounces of boiling distilled water, macerate for 1 hour, and strain and express once more. Mix the 2 colatures, add 2 drams or so of filter paper torn into shreds—scraps of filter paper from the cutting of filter papers may be used—and heat the liquid to boiling. Now skim the liquid, filter it through flannel, and evaporate to extract consistency.

A preparation that will keep better may be prepared by evaporating the strained liquid after boiling to rather soft extract, adding to the latter 2 fluidounces of alcohol, mixing well, allowing to stand for 48 hours, filtering and evaporating the filtrate to extract consistency.—D. modified.

Extract of Black Cohosh, Compound Fluid.

Black cohosh.....av.oz. 8¾
Wild cherry.....av.oz. 4½
Licorice.....av.oz. 2¾
Ipecac.....av.oz. 1
Senega.....av.oz. 1
Diluted alcohol.....sufficient

Mix the drugs, reduce to fine powder, and extract, using diluted alcohol as a menstruum, by the process of the pharmacopœia or the National Formulary, or any other suitable process for fluid extracts, the product to measure 16 fluidounces.

Extract of Bryony, Fluid.

Moisten 17½ av.ounces (=16 troy oz.) of bryony in fine powder with 2 fluidounces of water. Allow to stand in a covered vessel for one hour, then mix intimately with 3 fluidounces of alcohol, let stand for another hour, then extract by the process of the pharmacopœia or the National Formulary, using a menstruum composed of alcohol and water in the proportion of 8 of the former to 2 of the latter, both by measure.

Extract of Buchu, Compound Fluid.

Buchu.....	av.oz. 11
Cubeb.....	av.oz. 2½
Juniper.....	av.oz. 2½
Uva ursi.....	av.oz. 2½
Alcohol,	
Water.....	of each, sufficient

Mix the drugs, reduce to moderately fine powder and extract by the usual process for fluid extracts so as to obtain 16 fluidounces, using a menstruum composed of 1 volume of water and 2 of alcohol.—N. F.

Extract of Buchu, Juniper and Potassium Acetate, Compound.

Buchu.....	av.oz. 18½
Juniper.....	av.oz. 3½
Potassium acetate.....	av.oz. 1
Alcohol,	
Water.....	of each, sufficient

Mix the buchu and juniper, reduce them to tolerably fine powder, and extract by the process of the pharmacopœia or the National Formulary. The menstruum should consist of alcohol and water in the proportion of 2 of the former to 1 of the latter, both by measure. The percolate, after dissolving the potassium acetate in it, should measure 16 fluidounces.

Extract of Buchu and Pareira, Fluid.

Mix buchu leaves and cut pareira in equal parts, reduce to fine powder, and extract by the process of the pharmacopœia or the National Formulary, using as a menstruum a mixture of alcohol and water in the proportion of 2 of the former to 1 of the latter, both by measure.

Extract of Buchu, Pareira and Uva Ursi, Fluid.

Make like the preceding, using 8½ av. ounces of buchu and 4½ av. ounces of each of pareira and uva ursi, the product to measure 16 fluidounces.

Extract of Buckthorn. (Extract of Frangula.)

I.

Frangula, moderately coarse powder.....	av.oz. 4
Water.....	fl.oz. 24

Mix the drug with 16 fluidounces of water, macerate for 24 hours, strain with expression, upon residue pour 8 fluidounces of boiling water, macerate again for 1 hour, strain

and express, mix the two liquids, and evaporate to dryness.—D.

II.

Buckthorn bark, coarse powder.....	av.oz. 8
Diluted alcohol.....	fl.oz. 20
Distilled water.....	sufficient

Mix the bark and diluted alcohol, macerate for 2 days, pack in a percolator, allow the liquid to drain, and then pass enough water through the drug to make the percolate measure 40 fluidounces. Evaporate this percolate on a water bath to thick extract consistency.—Brit. Pharm.

Extract of Buckthorn, Bitterless

Fluid. (Extractum Frangulae examaratæ fluidum.)

Bitterless buckthorn bark.....	av.oz. 17½
Alcohol,	
Water.....	of each, sufficient

Extract the bark by the process of the pharmacopœia, or the National Formulary, or any other suitable process for fluid extracts. The menstruum should consist of alcohol and water in the proportion of 3 of the former to 1 of the latter, both by measure, and the product should measure 16 fluidounces.—D.

Bitterless buckthorn bark is prepared by intimately mixing 10 av. ounces of buckthorn bark in very fine powder and 1 av. ounce of calcined magnesia with 20 fluidounces of water, allowing to stand for 12 hours, drying on a water bath with constant stirring, powdering again, and sifting.—D.

Extract of Buckthorn, Palatable Fluid.

Fluid extract of buckthorn.....	fl.oz. 16
Ammoniated glycyrrhizin.....	gr. 120
Saccharin.....	gr. 60
Solution of potassa.....	fl.dr. 2
Water.....	fl.oz. 2

Dissolve the saccharin and glycyrrhizin in the water to which has been added the solution of potassa, the fluid extract of buckthorn, and mix thoroughly. The result is an elegant product, free from nauseating or disagreeable taste.

This product is, of course, somewhat weaker than a fluid extract is supposed to be.

Extract of Cactus Grandiflorus, Fluid.

The preparation sold under this name is usually a concentrated tincture, made from

the freshly gathered fleshy stems, leaves and flowers, which are crushed, covered with alcohol, and macerated for 2 weeks. Three species of plants are now generally employed indiscriminately in making this preparation, viz., *Cereus grandiflorus*, *C. Bonplandi* and *C. McDonaldi*.

Extract of Calamus.

Calamus, cut fineav.oz. 4
Alcohol
Water.....of each, sufficient

Mix the drug with 9 fluidounces of alcohol and 12 of water, macerate for 4 days, agitating occasionally, and strain with expression. To the residue, add 4½ fluidounces of alcohol and six of water, macerate for 24 hours, and strain with expression. Mix the two liquids and evaporate on a water bath to thick fluid extract.—Germ. Phar.

Extract of Calendula, Nonalcoholic, Fluid.

Calendula (flowering herb) in
No 40 powder.....av.oz. 17½
Glycerin.....fl.oz. 8
Alcohol,
Water.....of each, sufficient

Moisten the flowers with a menstruum composed of 2 parts of water and 1 of alcohol, by measure, and macerate for 12 hours. Precolate to exhaustion with same strength of menstruum, recover the alcohol by distillation, than evaporate carefully to 8 fluidounces, and add the glycerin.

Extract of Cardamom, Compound Fluid.

What is commercially sold under this title is made as follows:

Cardamom (without capsules) ..av.oz. 3½
Cassia cinnamon.....av.oz. 8½
Carawayav.oz. 1¾
Cochineal.....av.oz. ¾
Diluted alcohol.....sufficient

Grind the drugs to moderately fine powder, and extract with diluted alcohol by the process of the pharmacopœia or the National Formulary, so as to obtain 16 fluidounces of product.

This product is ten times the strength of the official tincture, which may be prepared by mixing 1 fluidounce of this with ½ fluidounce of glycerin, and 8½ fluidounces of diluted alcohol.

Extract of Cantharides, Acetic.

Cantharides, moderately fine powder.....av.oz. 4
Alcohol.....fl.oz. 20
Diluted acetic acid.....fl.oz. 1

Mix the above, macerate for 8 days, express, allow the colature to stand for several days, then filter, and evaporate the filtrate at a temperature not exceeding 60 degrees C., so that on cooling it will have the consistency of butter.

The yield is about 30 per cent.—D.

Extract of Carduus Benedictus.

Carduus benedictus, cutav.oz. 8
Alcohol,
Water,
Diluted alcohol.....of each, sufficient

Macerate the drug with 32 fluidounces of water, macerate for 24 hours, express, macerate the residue with 16 fluidounces of water for 24 hours, express again, mix the two liquids, evaporate to 4 av. ounces, and add to it 4 fluidounces of alcohol. Upon allowing to stand undisturbed in a cool place, crystals of potassium salts will separate; the liquid should be filtered, the substance remaining upon the filter should be macerated, or soaked with 2 fluidounces of diluted alcohol, and filter this in two or three days, mix the 2 filtrates, evaporate to 1½ av. ounces allow the extract to cool, set aside for 8 days, then dissolve it in 5 fluidounces of distilled water, set aside in a cool place for 24 hours, filter and evaporate the filtrate to a thick extract upon a water bath.

The yield is about 16 per cent.—D.

Extract of Cascara Sagrada.

Cascara sagrada, No. 20 powder. av. oz. 8
Alcohol,
Water.....of each, sufficient

Mix the drugs with 10½ fluidounces of alcohol and 13½ fluidounces of water, macerate for 6 or 7 days and express. Mix the residue with 7 fluidounces of alcohol and 8¾ fluidounces of water, macerate for 3 days, and express again. Mix the two liquids, set aside in a cool place for several days, filter, and evaporate the filtrate on a water bath either to thick consistency or to dryness. If made into hard plastic extract, the yield is about 28 per cent; if made into dry mass, it is but about 24 per cent.—D.

A more rational method of preparing this

extract would be by extracting the drug by percolation, using a menstruum composed of alcohol and water in the proportion of 3 of the former to 4 of the latter by measure, and evaporating the percolate as before.

Extract of Cascara Sagrada, Fluid.

I.

Cascara Sagrada, fine powder. .av.oz. 17½
Diluted alcohol.....sufficient

Extract the drug by the usual process for fluid extracts so as to obtain 16 fluidounces of product.—U. S. P.

II.

Cascara sagrada, coarse powder.av.oz. 16½
Alcohol.....fl.oz. 4
Distilled water.....sufficient

Boil the bark with 3 or 4 successive quantities of water, about 32 fluidounces each time, straining after each boiling. Evaporate the united colatures on a water bath to 12 fluidounces, allow to cool, add the alcohol, let stand for several hours, filter, and to the filtrate add enough distilled water, if necessary, to make 16 fluidounces.—Brit. Pharm.

Extract of Cascara Sagrada, Bitterless or Tasteless Fluid. (Extractum Cascaræ Sagradæ Examaratæ Fluidum.)

I.

Bitterless cascara sagrada.av.oz. 17½
Alcohol,
Water.....of each, sufficient

Use as menstruum a mixture of alcohol and water in the proportion of 3 of the former and 1 of the latter by measure. The process of extraction may be that of the pharmacopœia, or the National Formulary, or any other suitable process for fluid extracts. The product should measure 16 fluidounces.—D.

Bitterless cascara sagrada is made by intimately mixing 10 av.ounces of cascara sagrada in fine powder and 1 of calcined magnesia with 20 fluidounces of water, allowing to stand for 12 hours, then drying on a water bath with constant stirring, powdering again, and sifting.—D.

II.

Cascara sagrada, No.40 powder. av.oz. 17½
Calcined magnesia.....gr. 80
Alcohol,
Water.....of each, sufficient

Mix the alcohol and water in the proportions of 2 parts of alcohol to 3 parts of water

by measure, and moisten the mixed powders thoroughly with the menstruum, then let it stand until the bitterness has disappeared, and pack in a cylindrical percolator, not too firmly, and pour on menstruum. When the liquid begins to drop from the percolator, close the lower orifice, and proceed according to the U. S. P. or N. F. method of preparing fluid extracts, the product to measure 16 fluidounces.

III.

Cascara sagrada, coarsely powdered.....av.oz. 17½
Calcined magnesia.....av.oz. 1¾
Alcohol,
Water,
Glycerin.....of each, sufficient

Mix the drug and magnesia, moisten with water and allow to macerate for several hours. Then pack the mixture in a percolator and allow to macerate for 48 hours; add 12 fluidounces of alcohol, allow to macerate for 12 hours longer, and finally begin percolation, using diluted alcohol as the menstruum. The first 12 fluidounces should be reserved, and percolation continued to exhaustion. Recover the alcohol and evaporate the percolate to soft extract, and dissolve it in the reserved portion, adding sufficient glycerin to make 16 fluidounces.

The bitterless fluid extracts may be used as they are or be made still more pleasant by the addition of licorice and cinnamon or other aromatics. The next preparations are examples of aromatic fluid extract of cascara.

Extract of Cascara Sagrada, Aromatic Fluid. (Cascara Aromatic.)

I.

Cascara sagrada, fine powder. .av.oz. 17½
Licorice root, fine powder.....av.oz. 1¾
Calcined magnesia.....av.oz. 2¾
Glycerin.....fl.oz. 4
Compound spirit of orange.....fl.dr. 1¼
Alcohol.....fl.oz. 8
Water,
Diluted alcohol.....of each, sufficient

Mix the powdered drugs and the magnesia with 32 fluidounces of water; macerate for 12 hours and then dry the mixture on a water-bath at a gentle heat. Mix the glycerin and the alcohol with 4 fluidounces of water, and percolate the dried powders with this menstruum, followed by diluted alcohol. Reserve the first 12½ fluidounces that pass, and

set this aside. Continue the percolation with diluted alcohol to practical exhaustion, evaporate this second portion to a soft extract, dissolve it in the reserved portion, and add the compound spirit of orange and sufficient diluted alcohol to make 16 fluidounces of fluid extract.—N. F.

II.

Cascara sagrada, No. 40 powder av.oz. 17½
 Calcined magnesia.....av.oz. 1¾
 Water.....fl.oz. 18
 Alcohol.....fl.oz. 13
 Glycerin.....fl.oz. 4
 Extract of licorice, purified, N. F. av.oz. 4½
 Saccharin.....gr. 80
 Oil of fennel.....drops 5
 Diluted alcohol.....sufficient

Mix the first two ingredients very intimately, moisten with water and macerate for several hours. Then pack the mixture in a percolator and allow to macerate for another period of about 48 hours; then add the alcohol and allow to macerate 12 hours longer. Now start percolation with diluted alcohol and continue until the drug is exhausted. The percolation is allowed to go on very slowly at first, the heavier portion being reserved to the amount of about 18 fluidounces and the remainder in succession to about 16 fluidounces. Recover the alcohol, commencing with the most dilute of the liquors, and evaporate until the whole is reduced to 12 fluidounces, including the glycerin; to this product add the extract of licorice, saccharin and oil of fennel, the whole to measure 16 fluidounces.

III.

Cascara sagrada, No. 40 powder av.oz. 17½
 Calcined magnesia.....gr. 80
 Alcohol.....fl.oz. 19
 Water.....sufficient

Mix the alcohol with the water in the proportion of 2 of the former to 8 of the latter by measure; moisten the mixed powders thoroughly with the menstruum, and let stand until the bitterness disappears; then pack in a percolator and percolate, adding more water, if necessary, to exhaust the drug. Reserve the first 12 fluidounces of percolate, evaporate the remainder to 2 fluidounces, mix the two and add.

Spirit of cinnamon.....m. 80
 Spirit of nutmeg.....m. 15
 Fluid extract of licorice or purified extract of licorice, N. F. fl.oz. 1
 Glycerin.....fl.oz. 1

This preparation may also be prepared from the bitterless fluid extract of cascara sagrada by the addition of licorice extracts and aromatics.

Extract of Cascara Sagrada, Water-Miscible Fluid.

Cascara sagrada (1 year old),
 No. 20 powder.....av.oz. 17½
 Alcohol.....fl.oz. 4
 Distilled water.....sufficient

Moisten the bark with a portion of the water; allow to remain a few hours to soften and swell; pack loosely in a percolator, and percolate with more water until exhausted. Evaporate on a water bath to the consistency of a brittle extract, which, when cold, treat with cold water until thoroughly disintegrated. Allow this to stand and settle. Strain through flannel, and evaporate the strained liquor to 12 fluidounces, add the alcohol, when cold, and filter if necessary.

This preparation does not deposit either on keeping or on diluting with water, and, although bitter, is free from nauseous taste and smell.

Extract of Cascara Sagrada, Compound Fluid.

Fluid extract of cascara sagrada.....fl.oz. 6½
 Fluid extract of licorice.....fl.oz. 6½
 Fluid extract of berberis aquifolium.....fl.oz. 3¼
 —D.

Extract of Cinchona, Compound Fluid.

The article sold commercially under this title may be prepared as follows:

Red cinchona, powder.....av.oz. 7
 Bitter orange peel, powder.....av.oz. 5¼
 Serpentina, powder.....av.oz. 1½
 Glycerin,
 Water,
 Alcohol.....of each, sufficient

As a menstruum, use a mixture of the three liquids in the proportion of 1½ fluidounces each of the glycerin and water, and 14 of alcohol. Extract the mixed drugs by any suitable process so as to obtain 16 fluidounces of product.

This product is 4 times the strength of the compound tincture. To make the tincture, mix 4 fluidounces of this extract, 1 of water, and 11 of alcohol.

Extract of Catechu, Compound Fluid.

The article sold under this name may be made as follows:

Catechu, powder.....av.oz. 7
Cassia cinnamon, powder.....av.oz. 8½
Clean, dry sand,
Diluted alcohol.....of each, sufficient

Mix the two drugs and then add about twice the volume of sand; extract this mixture by the usual method for making fluid extracts, using diluted alcohol as a menstruum, the product to measure 16 fluidounces.

This product is 4 times the strength of the official tincture, which latter may be prepared from it by mixing 4 fluidounces with 12 fluidounces of diluted alcohol.

Extract of Colchicum Seed.

Colchicum seed, coarse powder..av.oz. 8
Alcohol,
Water.....of each, sufficient

Mix the seed with 10 fluidounces of alcohol and 80 of water, macerate for 5 or 6 days, agitating occasionally, and express. Mix the residue with 14 fluidounces of alcohol and 12 of water; macerate for 3 days, and express again. Mix the two liquids, set aside in a cool place for 2 days, filter, and evaporate the filtrate upon a water bath to thick extract.

The yield is 18 to 20 per cent.—D.

Extract of Columbo.

Columbo, coarsely powdered....av.oz. 8
Alcohol,
Water.....of each, sufficient

Mix the drug with 9 fluidounces of alcohol and 11 of water, macerate for 3 days at a temperature of 80 to 40 degs. C., and express. Mix the residue with 6 fluidounces of alcohol and 7 fluidounces of water; macerate for 24 hours, and express again. Mix the 2 liquids, place in a cool place for 2 days, filter, and evaporate the filtrate to dryness. The yield is 9 to 11 per cent.—D.

A preferable method of production would be to extract the fine drug with mixture of 4 parts by means of alcohol and 5 of water, by percolation, and evaporate this percolate to thick extract or dryness.

Extract of Couch Grass. (Extract of Triticum.—Mellago Graminis.)

Triticum, cut.....av.oz. 8
Water, boiling.....fl.oz. 48

Digest for 6 hours, strain, boil down about 12 fluidounces, allow to cool, add 16 fluidounces of water, filter, and evaporate the filtrate to thick consistency.—Germ. Pharm.

The yield is about 30 per cent.

Extract of Couch Grass, Fluid. (Fluid Extract of Triticum.)

I. Refer to the United States pharmacopœia.

II. The following is a quicker process than that of the pharmacopœia and yields a product equally good:

Triticum, cut.....av.oz. 17½
Alcohol.....fl.oz. 4
Water.....pints 10

Boil the drug for one-half hour with 5 pints of water, strain and express; boil the residue again in the same way with the same amount of water, strain again and express. Mix the 2 decoctions, evaporate them to 12 fluidounces, add 4 fluidounces of alcohol, filter, and add enough through the filter, if necessary, to make 16 fluidounces.

Extract of Elecampane. (Extract of Inula.—Extractum Helenii.)

Elecampane, coarse powder...av.oz. 8
Alcohol.....fl.oz. 28¾
Water.....fl.oz. 36

Mix the drug with 19¼ fluidounces of alcohol and 24 fluidounces of water, macerate for 24 hours, and express; macerate the residue with 9½ fluidounces of alcohol and 12 fluidounces of water for 24 hours and express again. Mix the two liquids and evaporate on a water bath to thick extract.—Germ. Pharm.

A better plan would be to exhaust the ground with a mixture of alcohol and water in the proportion of 4 of the former to 5 of the latter by measure, and then evaporate the liquid obtained, as before.

Extract of Ergot. (Ergotin.)

The extract of ergot of the United States pharmacopœia is prepared by evaporating the fluid extract which is made by extraction of the drug with diluted alcohol. This extract is now generally dispensed in this country when Bonjean's ergotin is demanded. This latter preparation was originally made

however, by exhausting powdered ergot with cold water by percolation, heating the percolate to 98 degs. C., filtering, evaporating the filtrate to a syrupy consistence, allowing to cool, adding alcohol in considerable excess to precipitate gummy and albuminous matter, allowing to stand, decanting the clear liquid, or else filtering, and evaporating the decantate or filtrate on a water bath to soft extract.

The ergotin of Wiggers, which is probably no longer in use, was simply a dried alcoholic extract of ergot.

Extract of Ergot, Fluid.

I.

Ergot, recently dried and in fine powder.....av.oz. 17½
Acetic acid.....fl.dr. 2½
Diluted alcohol.....sufficient

Mix the acid with 15¼ fluidounces of diluted alcohol; moisten, pack in a percolator, and macerate the drug in the usual way, using this mixture as a menstruum, and then percolate. When all this mixture is exhausted, follow it with diluted alcohol, percolating until no more extractive is obtained. Reserve the first 14 fluidounces of percolate, evaporate the remaining percolate, at a temperature not above 50 degs. C., to soft extract, add this to first percolate, and finally add enough diluted alcohol to make 16 fluidounces.—U. S. P.

II. Another preparation highly desirable for hypodermic use is the following:

"Purified ergot" is digested with twice its weight of water at 65 degs. C., for 24 hours and expressed; the residue is again macerated in warm water for 12 hours. After settling, the expressed liquids are strained and evaporated separately; when both together weigh one-half as much as the ergot employed, they are mixed and sufficient alcohol added to make the liquid of 25 per cent alcoholic strength, or one-third as much as the aqueous solution. After standing for several hours, the liquid is filtered and the gummy residue washed with so much 25 per cent alcohol as to make the filtered liquid measure three-fourths or 75 per cent of the amount of crude drug employed (volume for weight). To this glycerin is added to make the finished preparation represent the amount of

crude drug ergot originally used, pint for pound.

This preparation should be kept in small well-filled bottles in a cool, dark place.

Purified ergot employed in making the latter preparation may be made by percolating coarsely powdered ergot with deodorized benzine, until no more fatty matter is extracted, then passing alcohol through the drug until all the benzine is displaced, and then spreading the extracted drug out in thin layers and allowing it to remain exposed until perfectly dry and free from the odor of alcohol and benzine.

Such a prepared ergot will keep indefinitely.

Extract of Galanga, Fluid.

Extract the powdered drug by any suitable process, using alcohol as a menstruum, and evaporate the tincture obtained upon a water bath to soft extract.

Extract of Gentian, Compound Fluid.

The article sold commercially under this title may be prepared as follows:

Gentian.....av.oz. 11
Bitter orange peel.....av.oz. 4½
Cardamom.....gr. 480
Alcohol,
Water.....of each, sufficient

Reduce the drugs together to moderately coarse powder, and extract by the usual process for making fluid extracts, so as to obtain 16 fluidounces of product, using as a menstruum a mixture of alcohol and water in the proportions of 6 parts by volume of the former to 4 of the latter.

The product is six times the strength of the official compound tincture, which latter may be prepared from it by mixing 1 fluidounce of it with 8 of alcohol and 2 of water.

Extract of Golden Seal, Aqueous or Non-Alcoholic Fluid.

The preparation which is sold under this name is generally prepared like the "glycerite of hydrastis" of the pharmacopœia. This is prepared according to the following formulæ:

I.

Hydrastis, fine powder.....av.oz. 17½
Glycerin.....fl.oz. 8
Alcohol.....sufficient
Water, enough to make.....fl.oz. 16

Moisten the hydrastis with 6 fluidounces

of alcohol, pack it firmly in a percolator, and percolate with alcohol until the hydrastis is practically exhausted. To the percolate add 4 fluidounces of water, and then remove the alcohol by evaporation or distillation. After the alcohol is driven off, add enough water to the residue to make it measure 8 fluidounces, set it aside for 24 hours, then filter, pass enough water through the filter to make the filtrate measure 8 fluidounces, and, lastly, add the glycerin.—U. S. P.

Extract of Golden Seal. (Extract of Hydrastis.)

Exhaust golden seal in fine powder by any suitable process, using as a menstruum a mixture of alcohol and water in the proportion of 3 of the former to 1 of the latter by volume; then evaporate the tincture on a water bath to soft extract consistency.—D. modified.

The yield is about 30 per cent.

II.

Hydrastis, in fine powder.....av.oz. 17½
Alcohol.....fl.oz. 32
Glycerin.....fl.oz. 8
Water.....sufficient

Exhaust the hydrastis with the alcohol previously reduced to the strength of 85 per cent by the addition of 4 ounces of water in a suitable percolator. To the percolate thus obtained add the glycerin and water, and recover the alcohol by distillation. Let the residue stand for 2 days to separate resinous matter which deposits, decant the clear liquid, filter it, and add sufficient water to make the preparation measure 16 fluidounces.

Extract of Golden Seal, Colorless Fluid.

The preparation which is sold under this title is the same as the "colorless solution of hydrastis," which see elsewhere in Part I.

Extract of Hemlock Spruce, Non-alcoholic Fluid.

Pinus Canadensis, in No. 40 powder.....av.oz. 17½
Water,
Alcohol.....of each, sufficient
Glycerin.....fl.oz. 8

Mix the alcohol and water in the proportion of 1 of the former to 2 of the latter, and exhaust the drug by the process of percolation. Distill the alcohol from the percolate

and evaporate the remaining liquid to 8 fluidounces; to the residue add the glycerin.

Extract of Granatum. (Extract of Pomegranate Root Bark.)

Exhaust granatum in fine powder by any suitable process, using as a menstruum a mixture of alcohol and water in the proportion of 4 of the former to 5 of the latter by measure. Evaporate the tincture on a water bath to thick extract or to dryness. If evaporated to thick extract the yield is about 20 per cent, and if to dryness, about 16 per cent.—D. modified.

Extract of Horsechestnut Bark.

Horsechestnut bark, coarse powder.....av.oz. 8
Distilled water,
Alcohol.....of each, sufficient

Mix the bark with 28 fluidounces of distilled water for 12 hours, then heat on a water bath for 2 or 3 hours, and express. Heat the residue for 2 hours with 16 fluidounces of water, and again express. Evaporate the expressed liquids to 4 fluidounces, add 2½ fluidounces of alcohol, set aside for 24 hours, filter, wash the filter with a mixture of 4 fluidrams of alcohol and 6½ fluidrams of water, and evaporate the filtrate to dryness. The yield is about 14 per cent.—D. modified.

Extract of Jamaica Dogwood, Fluid.

(Fluid Extract of Piscidia.)

Jamaica dogwood, fine powder. av.oz. 17½
Glycerin.....fl.oz. 1½
Alcohol,
Water.....of each, sufficient

Moisten the drug with a mixture of the glycerin and 5½ fluidounces of alcohol, pack in a percolator, and exhaust with a mixture of alcohol and water in the proportion of 3 of the former to 1 of the latter by measure. Reserve the first 18 fluidounces, evaporate the remainder to soft extract, dissolve this in the reserved portion, and add enough of a mixture of alcohol and water like that used for extraction, to make the product measure 16 fluidounces.—D. modified.

Extract of Kola.

Kola, coarse powder.....av.oz. 8
Alcohol,
Distilled water.....of each, sufficient

Macerate the drug with a mixture of 28 fluidounces of alcohol and 12 of water for 2

days and express. Macerate the residue with 18½ fluidounces of alcohol and 8 of water for 2 days and again express. Mix the two liquids, filter, and evaporate the filtrate on a water bath to dryness. The yield is about 80 or 85 per cent.—D.

Extract of Kousoo, Fluid.

Kousoo, coarse powder.....av.oz. 17½
Alcohol.....sufficient.

Exhaust the drug by any suitable process of percolation, using alcohol as a menstruum, the product to measure 16 fluidounces.—D.

Extract of Lavender, Compound Fluid.

The article sold commercially under this title may be prepared as follows:

Cinnamon.....av.oz. 2¾
Nutmeg.....gr. 600
Red saunders.....gr. 600
Cloves.....gr. 300
Oil of lavender flowers.....fl.oz. 1
Oil of rosemary.....fl.dr. 2
Alcohol.....fl.oz. 11
Water.....fl.oz. 4
Diluted alcohol.....sufficient

Reduce the drugs to coarse powder; add the oils to the alcohol, add the water and with this mixture extract the drugs by any suitable process for fluid extracts, so as to obtain 16 fluidounces of extract, adding diluted alcohol, if necessary, to make up the requisite volume.

The product is eight times the strength of the compound tincture, which latter may be prepared from it by mixing 2 fluidounces of it with 10½ fluidounces of alcohol and 3½ fluidounces of water.

Extracts, Liquid.

A class of preparations by the name of "liquid extracts" are recognized by the British pharmacopœia and British Formulary. These are in general of the same strength as the fluid extracts of this country, and such of the liquid extracts as are recognized in this formulary are mentioned under the title of "fluid extracts."

Extract of Licorice.

I.

Licorice, coarse powder.....av.oz. 17½
Ammonia water.....fl.oz. 2½
Distilled water.....sufficient

Mix the ammonia water with 48 fluidounces

of water, macerate the drug with this mixture, macerate for 24 hours, pack in a percolator, and percolate with the remainder of the mixture, and then with distilled water until the drug is practically exhausted. Evaporate the liquid obtained on a water bath to pilular consistence.

This is the U. S. P. formula for pure extract of licorice.

II.

Extract of licorice in sticks,
Water.....of each, sufficient

Put a layer of well-washed rye-straw over the bottom of a keg or other suitable tall vessel. Then put a single layer of sticks of extract, broken into coarse pieces, over it. Continue to put in alternate layers of straw and extract until the vessel is full, or the whole of the extract has been disposed of. Fill the vessel with cold water, and allow it to remain for 3 days. Then draw off the solution, which has formed, by means of a faucet, or siphon, or otherwise, refill the vessel with cold water, and proceed as before. Mix the several solutions obtained, allow any suspended matter to subside, decant the clear solution, and strain the remainder without pressure. Finally evaporate the liquid on a water bath to the consistence of a pilular extract.

This is the N. F. formula for purified extract of licorice.

III.

Licorice root, cut.....av.oz. 8
Distilled water.....sufficient

Dry the licorice, reduce it to coarse powder, macerate with 24 fluidounces of water for 12 hours, and express; mix the residue with 16 fluidounces of hot water, macerate for 1 hour and again express. Mix the two liquids, add some filter paper pulp or scraps of filter paper, boil for not less than 15 minutes, removing the scum, and filtering. This filtrate must be returned to the filter until it is absolutely clear or transparent. Then evaporate to the consistence of thick honey, set it aside in a cool place for 2 days, dissolve in 2 parts of water, filter again, and evaporate on a water bath to thick extract.

Inasmuch as the liquids obtained or produced in the manufacture of this preparation "sour" quite easily, this extract is best made

during the cool seasons of the year, the different operations also being performed as rapidly as possible.

The yield from Russian licorice is 35 to 38 per cent; from spanish, 20 to 25 per cent.—D.

IV.

Russian licorice, coarsely powdered.....av.oz. 8
Alcohol.....fl.oz. 9
Water.....sufficient

Pour 40 fluidounces of cold water over the licorice, allow to stand for 4 hours, stirring frequently, and then express. Extract the press cake with 24 fluidounces of boiling water and again express. Mix the two liquid extracts and at once.

Evaporate to 4 av.ounces, and add to the solution while hot the alcohol, and allow to stand for 24 hours. Then filter through paper and from the filtrate distill off 5 fluidounces. Evaporate the residue to a medium thick extract consistence.

The extract is completely soluble in water. The yield is about 18 to 20 per cent. It is necessary, particularly in summer, to perform the operation rapidly; by beginning at 6 in the morning one can be ready by midday to go on with the evaporation and the alcohol can be added by evening.—D.

Extract of Lobelia, Compound Fluid.

Lobelia herb.....av.oz. 8¼
Skunk cabbage.....av.oz. 4¼
Blood root.....av.oz. 4¼
Diluted alcohol.....sufficient

Mix the drugs, reduce to powder, and extract in the usual way by percolation, employing diluted alcohol as a menstruum, the product to measure 16 fluidounces.

Extract of Logwood, Fluid.

Unfermented logwood, No. 20 powder.....av.oz. 16
Distilled water.....sufficient

Boil the logwood with 32 fluidounces of water in a covered copper or enameled pan for half an hour, and strain. Add 32 fluidounces of water to the residue, boil for another half-hour, and again strain. Repeat the process for a third time, and having mixed the strained liquors, evaporate over a water bath (or preferably in vacuo) until the product measures 16 fluidounces. Set aside

for 7 days, and then decant the clear liquor by means of a syphon from any sediment that may have been deposited.—Brit. Form.

Extract of Lovage. (Extractum Levistici.)

Exhaust powdered lovage in any suitable manner, using as a menstruum a mixture of 4 parts of alcohol and 5 of water by measure. Evaporate the liquid upon a water bath to the consistence of thick extract. The yield of extract is about 18 per cent.—D.

Extract of Malt.

I.

Barley malt, ground, not finer than No. 20.....av.oz. 17½
Distilled water.....fl.oz. 80

Mix the malt with 16 fluidounces of water, macerate for 6 hours, then add the remainder of the water at a temperature of 30 degs. C. and digest the whole on a water bath at a temperature not exceeding 55 degs. C. for an hour. Strain and press out all the liquid from the residue. Evaporate the colature at once on a water bath, or preferably in a vacuum apparatus, at a temperature not exceeding 55 degs. C., as rapidly as practicable, to the consistence of thick honey.

The extract must be preserved in well-closed vessels in a cool place.—U. S. P. 1880 and N. F.

II.

The following is a process for preparing a malt extract of somewhat different character, the quantities given here being, of course, such as would be used upon a tolerably large scale; these may, of course, be reduced as desired:

Use a tube or churn of a capacity of 5 gallons and having a perforated false bottom. Pour into it 3½ gallons of water of a temperature of about 76 to 78 degs. C., then add ½ peck of barley malt, coarsely ground, gradually stirring it in well. Cover the vessel and set away in a warm place, and allow to remain perfectly at rest for 3 or 4 hours, taking care that the temperature does not fall below 65 degs. C. This is the process of mashing.

At the end of the allotted period of time, open the stop-cock below, draw off the fluid; now sprinkle over the top of the malt some

water a little above the temperature of the extract, and draw off the fluid below, until the malt is practically exhausted. Evaporate the fluid by means of a water bath to thick consistence.

The tub or churn must be kept perfectly clean. Once a week it should be washed with alkaline water and when not in use it should be kept filled with lime water.

Extract of Malt, Fluid.

Maltav.oz. 16
Alcohol,
Water of each, sufficient

Reduce the malt to coarse powder, not finer than No. 20. Moisten it with 8 fluid-ounces of a mixture of 1 volume of alcohol and 3 volumes of water, and set it aside, well-covered, until it has ceased to swell. Then mix it with as much of the menstruum as it will take up without dripping, pack it uniformly, but without pressure, in a percolator, and add enough of the before-mentioned menstruum to cover it. When the liquid begins to drop from the orifice, close the latter, and allow the contents to macerate during 24 hours, adding from time to time more menstruum, if necessary, to keep the malt just covered. Then remove the cork and allow the percolation to proceed until the percolate weighs 12 av.ounces. Set this aside, well-corked, until any suspended matters have been deposited. Then decant the clear liquid and preserve it for use.

The product thus obtained may be regarded as being practically equivalent to the drug in the proportion of minim for grain, the apparent excess of dissolved matters present in the first portions of the percolate being about offset by the soluble matters still remaining in the drug, when the percolation is interrupted.—N. F.

Extract of Malt with Alteratives.

Calcium bromide.....gr. 128
Sodium bromide.....gr. 96
Potassium iodide.....gr. 160
Water, hotfl.oz. 1
Extract of malt, enough to
makefl.oz. 16

Dissolve the salts in the water, and add to the extract.

Extract of Malt with Beef.

Extract of beef, Liebig's.....av.oz. $\frac{1}{2}$
Waterfl.oz. 1
Extract of malt.....fl.oz. 15

Dissolve the extract of beef in the water and mix with the malt extract.

Extract of Malt with Beef, Wino and Iron.

Extract of maltfl.oz. 8
Beef, wine and iron.....fl.oz. 8

Extract of Malt with Cascara Sagrada.

Fluid extract of cascara sagrada fl.oz. 2
Extract of maltfl.oz. 14

Extract of Malt with Cod Liver Oil.

I.

Extract of maltfl.oz. 8
Cod liver oilfl.oz. 8
Oil of wintergreendrops 20
Oil of bitter almondsdrops 5

Rub the cod liver oil very gradually and thoroughly with the malt extract, then add the flavoring oils. If the mixture becomes too thick at any time, thin by the addition of a little water.

II.

Cod liver oilfl.oz. 8
Tragacanth, powder.....gr. 24
Extract of maltfl.oz. 6
Waterfl.oz. 2

Triturate the gum with the malt extract until well mixed, then add the oil gradually with uninterrupted trituration, and then add the water.

III.

Cod liver oil.....fl.oz. 8
Mucilage of dextrinfl.oz. 2
Extract of malt.....fl.oz. 6

To the mucilage of dextrin contained in a suitable bottle, add the extract of malt, and mix them thoroughly by agitation, and then gradually add the cod liver oil, first in small portions, agitating each time until the last-added portion is perfectly incorporated.

Extract of malt, most suitable for this preparation, should have about the same consistence as balsam of peru, at a temperature of 15 degs. C.—N. F.

Extract of Malt with Cod Liver Oil and Iron. (Extract of Malt with Cod Liver Oil, Ferrated.)

- I.
 Cod liver oil f.oz. 6
 Extract of malt f.oz. 6
 Syrup of soluble saccharated iron, N. F. f.oz. 4

Add the oil gradually to the extract by trituration in a mortar until an emulsion is formed, then add the syrup.

- II.
 Solution of dialyzed iron f.dr. $5\frac{1}{4}$
 Extract of malt with cod liver oil, enough to make f.oz. 16
 Mix well by trituration.

- III.
 Citrate of iron and ammonium ... gr. 64
 Water, hot f.dr. 4
 Extract of malt with cod liver oil f.oz. $15\frac{1}{2}$

Dissolve the iron salt in the water and incorporate this solution with malt extract and oil.

- IV.
 Iron phosphate, soluble gr. 64
 Water, hot f.dr. 4
 Extract of malt with cod liver oil f.oz. $15\frac{1}{2}$

Prepare like the preceding.

- V. Replace the iron phosphate in IV. with soluble iron pyrophosphate.

Extract of Malt with Cod Liver Oil, Pancreatin and Pepsin.

- Pancreatin, saccharated gr. 64
 Pepsin, saccharated gr. 128
 Extract of malt with cod liver oil f.oz. 16

Triturate the pepsin and pancreatin together to fine powder, add a portion of the malt extract with oil, mix well, and add the remainder.

Extract of Malt with Cod Liver Oil and Pancreatin. (Malt Extract with Pancreatized Cod Liver Oil.)

- I.
 Cod liver oil f.oz. 6
 Water f.oz. 2
 Extract of malt f.oz. 8
 Pancreatin, pure gr. 20
 Sodium chloride gr. 40
 Sodium bicarbonate gr. 60
 Oil of pimento sufficient

Dissolve the pancreatin and salines in the water, add the oil, and keep at a tempera-

ture of about 32 degs. C. for 3 hours, stirring occasionally. Put the malt extract in a mortar, add the pancreatized oil gradually with constant stirring, and flavor the whole with oil of pimento (or other suitable flavoring.)

II. In this preparation, the oil is not first pancreatized as in the foregoing formula:

- Pancreatin, saccharated gr. 64
 Extract of malt with cod liver oil f.oz. 16

Triturate the pancreatin to fine powder, add a small portion of the extract with oil, mix well, and add the remainder.

Extract of Malt with Cod Liver Oil and Pepsin.

- Pepsin, saccharated gr. 128
 Extract of malt with cod liver oil f.oz. 16

Triturate the pepsin to fine powder, add a portion of the malt extract with oil, mix well, and add the remainder.

Extract of Malt with Cod Liver Oil and Hypophosphites.

- Calcium hypophosphite gr. 64
 Sodium hypophosphite gr. 48
 Potassium hypophosphite gr. 32
 Glycerin f.oz. 1
 Water, hot f.oz. 1
 Extract of malt with cod liver oil f.oz. 14

Triturate the hypophosphites to a fine powder, dissolve them as nearly as possible in the water and glycerin, and incorporate with malt extract and oil.

Extract of Malt with Cod Liver Oil and Phosphorus.

- I.
 Phosphorus gr. 1
 Cod liver oil f.oz. 24
 Extract of malt f.oz. 24

Dissolve the phosphorus by the heat of a water bath in 4 fluidounces of the oil in a stoppered bottle, shake thoroughly and when still warm incorporate the extract of malt, then add the remainder of the oil slowly to form an emulsion.

II. Instead of using phosphorus as above, 100 minims of phosphorated oil may be employed, this latter to be added to the cod liver oil, and this mixture then to be added to the extract of malt in the usual manner.

III. Instead of using either free phosphorus or phosphorated oil, solution of phosphorus N. F. may be employed as according to the following:

Solution of phosphorus.....fl.oz. 1
Extract of malt with cod liver
oil.....fl.oz. 15

Mix well by trituration.

Each half fluidounce contains about 1-100 gr. of phosphorus.

Extract of Malt with Gentian and Chloride of Iron.

Extract of malt.....fl.oz. 8
Elixir gentian and chloride of
iron.....fl.oz. 8

Extract of Malt with Hypophosphites.

Calcium hypophosphite.....gr. 64
Sodium hypophosphite.....gr. 48
Potassium hypophosphite.....gr. 32
Water, hot.....fl.oz. 1
Glycerin.....fl.oz. 1
Extract of malt.....fl.oz. 14

Rub the salts in a mortar with the water until dissolved or nearly so, add the glycerin and finally the malt extract.

The above is also made to contain 32 gr. of iron hypophosphite.

Extract of Malt with Hypophosphite of Calcium.

Calcium hypophosphite.....gr. 128
Water, hot.....fl.oz. 1
Glycerin.....fl.oz. 1
Extract of malt.....fl.oz. 14

Triturate the calcium salt to fine powder, dissolve as nearly as possible in the water and glycerin, and add the malt extract.

Extract of Malt and Iron. (Ferrated Extract of Malt.)

I.

Iron pyrophosphate.....gr. 64
Water, hot.....fl.oz. 4
Extract of malt, enough to make fl.oz. 16

Dissolve the iron salt in the water and incorporate the solution with the malt extract.

This is the usual method of preparing ferrated extract of malt.

II.

Solution of dialyzed iron.....fl.dr. 5½
Extract of malt, enough to make fl.oz. 16

III.

Citrate of iron and ammonium...gr. 64
Water, hot.....fl.dr. 4
Extract of malt.....fl.oz. 15½

Dissolve the iron salt in the water and add the extract.

IV. Instead of iron citrate in the last formula, soluble iron phosphate may be employed.

V.

Tincture of citrochloride of iron fl.dr. 4
Extract of malt.....fl.oz. 15½

Extract of Malt with Iron and Quinine Citrate.

Citrate of iron and quinine.....gr. 128
Water, hot.....fl.oz. 1
Extract of malt.....fl.oz. 15

Dissolve the iron and quinine salt in the water and incorporate with the malt extract.

Extract of Malt with Iron, Quinine and Strychnine Citrate.

Strychnine sulphate.....gr. ¾
Distilled water.....fl.dr. 2
Extract of malt with iron and
quinine citrate, enough to
make.....fl.oz. 16

Dissolve the strychnine salt in the water and incorporate this solution with the compound malt extract.

Extract of Malt with Pancreatin.

Pancreatin, saccharated.....gr. 64
Extract of malt.....fl.oz. 16

Triturate the pancreatin and a small portion of the extract to a smooth paste and add the remainder of the extract.

Extract of Malt with Pepsin.

Pepsin, pure.....gr. 64
Hydrochloric acid.....fl.dr. 1
Glycerin.....fl.oz. 1
Water.....fl.oz. 1
Extract of malt.....fl.oz. 14

Add the acid to the water and in this dissolve the pepsin, then add the glycerin and finally the malt extract.

Extract of Malt with Compound Syrup of Phosphates.

Compound syrup of phosphates,
N. F.....fl.oz. 8
Extract of malt.....fl.oz. 8

Extract of Malt with Pancreatin and Pepsin.

Pancreatin, saccharated	gr. 64
Pepsin, saccharated	gr. 128
Simple syrup	fl.oz. 1
Extract of malt, enough to make	fl.oz. 16

Triturate the pepsin and pancreatin to a smooth paste with the syrup, then add the malt extract.

Extract of Malt with Phosphate of Iron and Quinine.

Elixir of iron phosphate and quinine	fl.oz. 8
Extract of malt	fl.oz. 8

Extract of Malt with Phosphate of Iron, Quinine and Strychnine.

Elixir of iron phosphate, quinine and strychnine	fl.oz. 8
Extract of malt	fl.oz. 8

Extract of Malt with Yerba Santa.

Fluid extract of yerba santa	fl.oz. 1
Extract of malt	fl.oz. 15

Extract of Manaca, Fluid.

Manaca root, fine powder	av.oz. 17½
Glycerin	fl.oz. 3
Alcohol,	
Water	of each, sufficient

Moisten the drug with a mixture of the glycerin and 4½ fluidounces of alcohol, then pack in a percolator and exhaust by the usual process of percolation, using as a menstruum a mixture of 8 parts by measure of alcohol and 1 of water. Reserve the first 11 fluidounces of percolate, evaporate the weak percolate to 5 fluidounces and mix with the reserve percolate.—D. modified.

Extract of Mezereon.

Exhaust mezereum in coarse powder by means of percolation or any other suitable process, using alcohol as a menstruum. Evaporate the percolate on a water bath to thin extract.—Germ. Phar.

The yield of extract is about 10 per cent.

Extract of Opium, Aqueous.

This extract of opium of the German Pharm. differs from that of the U. S. Pharm. in not containing an addition of milk sugar to standardize the morphine strength and keep it in the powder form.

This addition of a foreign substance is,

however, not necessary, if the process is modified, in shaking the concentrated opium infusion with an equal part of petroleum benzin; allow to stand together until separation has taken place; decant the benzin and evaporate the infusion to dryness. The extract so produced is easily reduced to powder and will remain in this form, is readily soluble in water, producing therewith a clear solution.

Extract of Opium, Aqueous Deodorized Fluid.

The article sold generally under this title is the deodorized tincture of opium of the U. S. pharmacopœia.

Extract of Opium, Camphorated Fluid. (Concentrated Paregoric.)

Opium, fine powder	gr. 240
Benzoic acid	gr. 240
Camphor	gr. 240
Oil of anise	fl.dr. 4
Alcohol	fl.oz. 12
Water	fl.oz. 3

Dissolve the camphor, oil and acid in the alcohol, triturate opium to a smooth paste with the water, mix the two liquids, macerate for 7 days, agitating frequently, and filter.

This is similar to the "convenience" preparations put up by manufacturers which may be used for making paregoric. To make the latter mix 2 fluidounces of the concentrated preparation with 1 fluidounce of glycerin and 13 fluidounces of diluted alcohol.

Extract of Pink Root and Senna, Fluid.

Fluid extract of pink root	fl.oz. 10
Fluid extract senna	fl.oz. 6
Oil of caraway	m. 20
Oil of anise	m. 20

—U. S. P. 1870.

Extracts, Powdered.

Most extracts now appear on the market, not only in the old-style plastic form, but also in the form of powder. Inasmuch as almost all plant extracts are injured by the application of heat, the powdered extracts do not very well represent the drug, less so in fact than almost any preparation made from a crude drug. However, there is a demand for these powdered extracts, and this demand must and will be supplied. Extracts

like those of opium and kino can be evaporated to dryness without any appreciable injury to the principles present, but others again, like hyoscyamus, valerian, etc., are very susceptible to change, either because of the presence of easily decomposable principles or because of the presence of volatile matter. These latter extracts should never be prepared in the powdered form.

In making powdered extracts of drugs containing volatile or easily decomposable principles, the temperature employed in drying should be quite low, say not to exceed 55 degs. C. The drying of the extract may be facilitated by spreading out in a thin layer and warming in a drying room or closet at the specified temperature, driving a current of warm, dry air through the chamber if this be convenient. Even then it may not be advisable or possible to reduce the extract to such dryness that it can be powdered, and then it becomes necessary to add a small amount of some substance, such as milk sugar or some of the powder of the drug itself. If the drug contains considerable fixed oil, the extract cannot be dried thoroughly and the intervention of such a powder is necessary. It is also to be remembered in this connection that in making powdered extracts, glycerin must not enter into the menstruum employed in the extraction of the drug, as this will prevent the extract from drying.

After an extract has been reduced to dryness, either with or without the intervention of the added powder, it should be reduced to fine powder and then be preserved in well-stoppered, wide-mouthed bottles.

Extract of Rhubarb, Aromatic Fluid.

Rhubarb	av.oz. 13½
Cinnamon	av.oz. 2¾
Cloves	av.oz. 2¾
Nutmeg	av.oz. 1½
Diluted alcohol	sufficient

Reduce the drugs to moderately coarse powder and extract by the usual method of percolation, so as to make 16 fluidounces of product, using diluted alcohol as a menstruum.—N. F., 1st edition.

If 1 fluidounce of this be mixed with 15 fluidounces of syrup, the product is practical-

ly identical with the aromatic syrup of rhubarb of the pharmacopœia.

Extract of Rhubarb, Compound.

Extract of rhubarb	av.oz. 8
Extract of aloes	av.oz. 1
Resin of jalap	av.oz. ½
Soap, powdered	av.oz. 2

All of the above, if not in fine powder, should be reduced to this condition and then should be well mixed.—Germ. Phar.

Extract of Quebracho.

Exhaust finely powdered quebracho by any suitable process, using as a menstruum a mixture of 4 parts of alcohol and 5 of water by volume, then evaporate the tincture on a water bath either to thick extract or to dryness.

The yield of thick extract is about 11 per cent, of dry extract 9 to 10 per cent.—D. modified.

Extract of Rose, Inspissated.

Rose leaves, cut moderately coarse	av.oz. 8¾
Alcohol,	
Water,	
Glycerin	of each, sufficient

Mix 30 fluidounces of alcohol and 10 of water, pour this mixture on the rose leaves, allow it to stand for 24 hours, express and evaporate the resulting fluid to 4 fluidounces. Allow the evaporated extract to stand for 24 hours at the room temperature, filter and evaporate the filtrate to a syrupy consistence. Then add sufficient glycerin to bring the whole up to 2 fluidounces. Of this extract, which is clearly soluble, 4 fluidrams is sufficient to make 16 fluidounces of honey of rose.

However, according to the U. S. pharmacopœia, honey of rose should be made from fluid extract of rose.

Extracts, Saccharated.

These are a class of powdered extracts which represent the drug, weight for weight. They are prepared by exhausting the powdered drug with a suitable menstruum, evaporating the tincture to thick extract, adding some sugar of milk, continuing the evaporation to dryness, powdering and adding enough milk sugar to make up the weight of the original drug.

With one exception, these extracts are

seldom or never prescribed or used, the exception being saccharated extract of coto.

Extract of Sarsaparilla.

Exhaust this drug in fine powder by the process of percolation or any other suitable process, using as menstruum a mixture of 6 parts of alcohol and 5 of water by volume; evaporate the tincture on a water bath to thick extract. The yield is about 20 per cent.—D. modified.

Extract of Sarsaparilla, Compound Fluid.

I.

Sarsaparilla	av.oz.	18½
Licorice root	gr.	920
Sassafras bark	av.oz.	1¾
Mezereum	av.oz.	½
Glycerin	fl.dr.	18
Alcohol,		
Water	of each,	sufficient

Mix the glycerin with 5 fluidounces of alcohol and 10 of water. Percolate the drugs, mixed and ground to coarse powder, in the usual manner for making fluid extracts, using this mixture as a menstruum, so as to obtain 16 fluidounces of product. If more menstruum be required, a mixture of 1 volume of alcohol and 2 of water should be employed.—U. S. P.

II. Another preparation of the same name is offered by manufacturers for the rapid preparation of the compound syrup of sarsaparilla. This preparation may be made as follows:

Sarsaparilla	av.oz.	14¾
Licorice	gr.	480
Senna	gr.	480
Oil of sassafras	drops	8
Oil of anise	drops	8
Oil of wintergreen	drops	8
Alcohol,		
Water ..	of each	sufficient.

Mix the drugs, reduce them to moderately fine powder and extract by percolation or any suitable process to obtain 16 fluidounces of product, using as a menstruum a mixture of 1 part of alcohol to 2 of water by measure. To the product obtained add the volatile oils and shake well.

To make the compound syrup of sarsaparilla, mix 4 fluidounces of this extract with 12 fluidounces of simple syrup.

Extract of Senega.

Exhaust senega in fine powder by percolation or any other suitable process, using as a menstruum a mixture of 4 parts of alcohol and 5 parts of water by measure; then evaporate the tincture on a water bath to dryness. The yield is about 25 per cent.—D. modified.

Extract of Senna, Aqueous Fluid.

The preparations sold commercially under this title are usually made by infusing cut senna leaves with enough hot water to just cover them, allowing to macerate for an hour or two, straining and expressing the liquid, infusing the residue again as before, straining and expressing the liquid again in the course of an hour or two, and mixing the two liquids. This liquid usually measures more than a finished fluid extract should measure, and inasmuch as it is not practicable to evaporate this infusion, the fluid extract of the market is prepared from the latter by adding enough alcohol to preserve it, allowing to stand for 24 hours, and filtering the liquid from the precipitated mucilage. The product is, of course, not properly a fluid extract.

A better process for this preparation is the process of the National Formulary for making deodorized fluid extract of senna, which is as follows:

Senna, fine powder	av.oz.	17½
Alcohol,		
Water	of each,	sufficient

Moisten the senna with 5½ fluidounces of alcohol, pack it firmly in a percolator, and percolate it with alcohol until it is practically exhausted by this menstruum. The alcoholic percolate thus obtained is rejected, and the alcohol may be recovered therefrom by distillation. Then take out the moist powder, dry it, and extract by the usual method for making fluid extracts, using diluted alcohol as a menstruum, so as to obtain 16 fluidounces of product.

Extract of Senna, Compound Fluid.

Senna	av.oz.	7¾
Jalap	av.oz.	7¾
Ccriander	av.oz.	2¾
Alcohol,		
Water ..	of each,	sufficient

Reduce the drugs to fine powder and ex-

haust by percolation or any other suitable process for fluid extracts, using as a menstruum a mixture of 2 parts of alcohol and 1 of water by measure. The product should measure 16 fluidounces.

Extract of Senna and Jalap, Fluid.

Sennaav.oz. $8\frac{3}{4}$
 Jalapav.oz. $8\frac{3}{4}$
 Alcohol,
 Waterof each, sufficient

Mix the drugs, reduce to fine powder, and exhaust by percolation or any other suitable process for fluid extracts, using as a menstruum a mixture of 2 parts of alcohol and 1 of water by measure. The product should measure 16 fluidounces.

Extract of Squill.

Squill, coarse powderav.oz. 8
 Alcohol,
 Waterof each, sufficient

Macerate the drug for 48 hours with $16\frac{1}{2}$ fluidounces of alcohol and $5\frac{1}{2}$ of alcohol and express. Macerate the residue again for 48 hours with 10 fluidounces of alcohol and $3\frac{1}{4}$ fluidounces of water and again express. Mix the two liquids, filter, and evaporate the filtrate on a water bath to thick consistency.

The yield is about 86 per cent.—D. modified.

Extract of Sumbul, Fluid.

Exhaust sumbul in fine powder with alcohol as a menstruum, using percolation or any other suitable process for extraction.

Extract of Tobacco, Rademacher's.

Tobacco leaves, freshly gathered (green),
 Waterof each, sufficient

Cut the leaf, contuse in a mortar with sufficient water to make a pasty mass, express, and evaporate the liquid to soft extract. The yield is about 4 per cent.

Extract of Tolu, Fluid.

Tolu balsamav.oz. $8\frac{3}{4}$
 Alcohol, sufficient to makefl.oz. 16

Digest the balsam in a closed vessel with 10 fluidounces of alcohol on a water bath until dissolved, then strain through flannel, and wash the vessel and strainer with enough alcohol to make up the required amount.

This is not rightly a fluid extract; it is

designed for the convenient preparation of the official tincture, which may be prepared by mixing $2\frac{1}{2}$ fluidounces of the "fluid extract" with $13\frac{1}{2}$ fluidounces of alcohol.

Extract of Tolu, Soluble Fluid.

The preparation which passes under this name may be prepared according to the following process:

Tolu balsamav.oz. $2\frac{1}{2}$
 Magnesium carbonategr. 100
 Glycerinfl.oz. 6
 Water,
 Alcoholof each, sufficient

Mix 5 fluidounces of the alcohol with the glycerin, add the balsam, and dissolve the latter by the aid of a moderate heat, shaking frequently, and avoiding loss by evaporation. Now add 6 fluidounces of water, allow the mixture to become cold, decant the milky liquid from the resinous precipitate, mix the decantate intimately with the magnesium carbonate in a mortar, filter, and wash mortar and filter with enough of a mixture of 1 part of alcohol and 2 of water by measure to make the filtrate measure 16 fluidounces.

This is designed for the rapid manufacture of syrup of tolu, which may be made by mixing 1 fluidounce of this "fluid extract" with 15 of simple syrup.

It is to be noted that the National Formulary recognizes a soluble tincture of tolu which was intended for the rapid preparation of syrup of tolu; this tincture is, however, not 16 times the strength of the syrup, as stated by the National Formulary.

Extract of Valerian.

Exhaust valerian root in fine powder by percolation or any other suitable process, using as a menstruum a mixture of 4 parts of alcohol and 5 of water by volume. Evaporate the tincture obtained on a water bath to thick extract. The yield is about 20 per cent.—D. modified.

Extract of Wahoo. (Extract of Euonymus.)

I.
 Wahoo, coarse powderav.oz. 8
 Water,
 Alcoholof each, sufficient

Mix 2 volumes of alcohol and 1 of water and extract the drug in the usual way by percolation, so as to obtain 22 fluidounces of

percolate or until the drug is exhausted. Evaporate this percolate on a water-bath to pilular consistence.—U. S. P.

II. The above preparation is in the form of a plastic extract; the British Formulary recognizes a similar preparation called "dry extract of euonymus" or "euonymin," which is prepared as follows:

Euonymus, No. 20 powderav.oz. 8
Diluted alcohol,
Milk sugarof each, sufficient

Moisten the bark with 8 fluidounces of diluted alcohol, pack in a percolator, and percolate with the same liquid until exhausted. Evaporate the percolate on a water bath to remove the alcohol. While the extract is still soft, incorporate with it enough powdered milk sugar—the actual amount required having been ascertained by first experimenting with a small amount of the extract—so that the final product shall contain 80 per cent of dry extractive. Then continue evaporation until the mixture is brittle when cold. Then powder and put into a well-stoppered bottle.

Extract of Wormwood.

Wormwood, fine powderav.oz. 8
Alcohol,
Waterof each, sufficient

Exhaust the drug by percolation or any other suitable process, using as a menstruum a mixture of 3 parts of alcohol and 10 of water by volume. Evaporate the tincture obtained on a water bath to thick extract.—Germ. Pharm. modified.

The yield is about 32 per cent.

Extract of Yellow Dock, Compound Fluid.

Yellow dockav.oz. 8¼
False bittersweetav.oz. 4¼
Figwortav.oz. 2¼
American ivyav.oz. 2¼
Diluted alcoholsufficient

Mix the drugs, reduce to fine powder, and exhaust by percolation or any other suitable process for fluid extracts, using diluted alcohol as a menstruum, the product to measure 16 fluidounces.

Extract of Yarrow.

Yarrow, fine powderav.oz. 8
Alcohol,
Waterof each, sufficient

Exhaust the drug by percolation or any other suitable process, using as a menstruum a mixture of 4 parts of alcohol and 5 of water by measure. Evaporate the tincture on a water bath to thick extract.

The yield of extract is about 22 per cent.—D.

Fats.

Fats, or greases, more properly termed Lards, may be found under the latter designation.

Fulgokali.

Caustic potassaav.oz. 1
Wood sootav.oz. 5
Watersufficient

Dissolve the potassa in a sufficiency of water, about 32 fluidounces, add the soot, boil for one hour, dilute largely with water, filter, evaporate, filtrate to dryness, and place in a well-corked bottle.

The dose is 2 or 3 grains.

Glycerite of Alum.

Alum, powderav.oz. 3
Glycerinfl.oz. 14½

Stir together in a porcelain dish, apply a gentle heat until solution is effected, set aside and decant the clear fluid from any deposited matter.—Brit. Pharm.

Glycerite of Borax.

Borax, powderav.oz. 4
Glycerinfl.oz. 14½

Triturate together until dissolved, or else warm gently, stirring constantly until dissolved.—U. S. P. 1870.

Glycerite of Boric and Tannic Acids.

Boric acidav.oz. 1
Tannic acidav.oz. 1¼
Glycerinfl.oz. 18

Mix the acids with the glycerin, heat on a water bath until dissolved, and strain.

Glycerite of Carbolic Acid.

Carbolic acid, crystalav.oz. 3¼
Glycerinfl.oz. 12¼

Warm the acid, add the glycerin, and stir until mixed.—U. S. P. 1870.

Glycerite of Creosote.

Creosotefl.oz. 1¼
Alcoholfl.oz. 2
Glycerinfl.oz. 5¼
Waterfl.oz. 6¼
Magnesium carbonateav.oz. 1

Triturate the magnesium carbonate, alcohol

and creosote together in a mortar, add the water and the glycerin, put the whole in a bottle, let stand for several days and filter. The product represents about 10 per cent by weight of creosote, and may be used for making other preparations of this agent.

Glycerite of Chloroform.

Chloroform.....fl. oz. $1\frac{1}{4}$
Alcohol.....fl. oz. $4\frac{1}{2}$
Glycerin.....fl. oz. $10\frac{1}{4}$

Dissolve the chloroform in the alcohol, add the glycerin, and shake well.

The product represents 10 per cent by weight of chloroform.—D.

Glycerite of Gallic Acid.

Gallic acid.....av.oz. $8\frac{1}{2}$
Glycerin.....fl.oz. $12\frac{3}{4}$

Mix well, heat on a water bath until the acid is dissolved; and strain.—Brit. Pharm.

Glycerite of Guaiac.

Resin of guaiac, powder.....gr. 640
Solution of potassa.....fl.oz. 1
Glycerin.....fl.oz. $9\frac{1}{2}$
Water, enough to make.....fl.oz. 16

Mix the solution of potassa with 5 fluid-ounces of water, and in this liquid macerate the resin for 24 hours. Then filter, and pass enough water through the filter to make the filtrate measure $6\frac{1}{2}$ fluidounces, and mix this with the glycerin.—N. F.

Glycerite of Lead Subacetate.

Lead acetate.....av.oz. $8\frac{1}{2}$
Lead oxide, powder....av.oz. 2; gr. 20
Glycerin.....fl.oz. 15
Distilled water.....fl.oz. 9

Mix all, boil together for 15 minutes, then filter, and heat again until all the water has evaporated.—Brit. Pharm.

This is of the same strength the solution of lead subacetate U. S. P., and may be employed in making the diluted solution of lead subacetate.

Glycerite of Starch.

Starch.....av.oz. 1
Water.....fl.oz. 1
Glycerin.....fl.oz. $6\frac{1}{4}$, or av.oz. 8

To the starch, contained in a porcelain capsule, add the water and glycerin, and stir until a homogenous mixture results. Then apply heat, gradually raising the temperature to a point between 140 and 144 degrees C., stirring constantly until a transparent jelly is

produced. Transfer the product to suitable vessels, provided with well-fitting covers.—U. S. P.

Greases.

Greases or fats, more properly termed "lards," may be found under the latter designation.

Honey of Borax.

I.

Borax powder.....av.oz. 2
Clarified honey.....av.oz. 16

Mix and dissolve by the aid of a gentle heat.—U. S. P., 1870.

II.

Borax.....av.oz. 2
Glycerin.....fl.oz. 1
Honey.....av.oz. $14\frac{1}{2}$

Prepare like the preceding.—Brit. Pharm.

Honey of Rose with Borax.

Honey of rose, U. S. P.....av.oz. 10
Borax.....av.oz. 1

Mix and dissolve borax by aid of a gentle heat.

Honey of Rose with Salicylic Acid.

Honey of rose.....av.oz. 16
Salicylic acid.....gr. 140

Triturate the acid intimately with a small portion of the honey of rose, then add the remainder of the honey.

Honey of Rose with Tannic Acid.

Honey of rose.....av.oz. 16
Tannic acid.....gr. 370

Triturate the acid intimately with a small portion of the honey of rose, then add the remainder of the rose honey.

Hydromel.

Honey.....fl.oz. 1
Water.....fl.oz. 9

Infusion of Buchu.

I.

Buchu.....gr. 510
Distilled water, boiling.....fl.oz. 16

Mix, let stand in a covered vessel for 2 hours, then strain, and pass enough water through the strainer to make 16 fluidounces.—U. S. P., 1870.

II.

Buchu.....gr. 360
Distilled water, boiling.....fl.oz. 16

Mix, let stand in a covered vessel for half an hour, and strain.—Brit. Pharm.

Infusion of Columbo.**I.**

Columbo, cut small.....av.oz. $\frac{1}{2}$
 Distilled water, coldfl.oz. 16

Macerate for 2 hours and strain.—U. S. P. 1870.

II.

Columbo, cut small.....gr. 360
 Distilled water, coldfl.oz. 16

Mix, let stand for half an hour, and strain.—Brit. Pharm.

Infusion of Gentian, Compound.

Gentiangr. 230
 Bitter orange peel,
 Coriander, of each.....gr. 57
 Alcohol,
 Water, of each.....sufficient

Extract the drugs in the form of a coarse powder, by percolation, using as a menstruum a mixture of alcohol and water in the proportion of 1 part by volume of the former to 7 of the latter. The product should measure 16 fluidounces.—U. S. P., 1870.

Infusion of Golden Seal, Compound.

Golden seal.....gr. 240
 Blue cohoshgr. 240
 Witch hazel bark.....gr. 240
 Alumgr. 60
 Water, boilingfl.oz. 16
 Honey.....sufficient

Infuse the 3 drugs with the boiling water in the usual way, strain, add the alum, dissolve, and then add sufficient honey to sweeten. Used as wash for various forms of sore mouth, and as a gargle.—Eclectic.

Infusion of Matico.

Matico.....gr. 360
 Distilled water, boiling.....fl.oz. 16

Mix, let stand in a covered vessel for half an hour, and strain.—Brit. Pharm.

Infusion of Pink Root, Compound.

(Worm Tea.)

Pink root, bruised.....av.oz. $\frac{1}{2}$
 Senna, cut.....gr. 144
 Fennel, bruisedgr. 144
 Mannaav.oz. $\frac{3}{4}$
 Water, boiling.....fl.oz. 16

Mix the above, let stand until cold, and decant the clear liquid.

Dose, 1 to 5 fluidounces.

Infusion of Sage.

Sagegr. 240
 Water, boilingfl.oz. 16

Mix, let stand in a covered vessel for half an hour, and strain.—U. S. P., 1870.

Infusion of Sage, Compound.

Sage.....gr. 240
 Hyssopgr. 240
 Borax.....gr. 30
 Water, boiling.....fl.oz. 16

Infuse the drugs in the usual way with the water, strain, and dissolve the borax in the colature. Used as a mouth wash and gargle.—Eclectic.

Infusion of Senna.

Sennagr. 480
 Coriander, bruised.....gr. 60
 Distilled water, boilingfl.oz. 16

Mix, let stand in a covered vessel for 1 hour, and strain.—U. S. P., 1870.

Infusion of Tar. (Tar Water.)

Pine tar.....fl.oz. 4
 Waterfl.oz. 16

Mix, shake frequently during 24 hours, decant the supernatant liquid, and filter.—U. S. P., 1870.

Inhalation of Bromine, Netolitsky's.

Bromine.....gr. 36
 Potassium bromidegr. 36
 Waterfl.oz. 15 $\frac{3}{4}$

Dissolve the potassium bromide in a very small portion of the water, then carefully counterbalance the vessel containing the solution on a small balance, then place the proper weights on the opposite pan of the balance, and then drop the bromine from a dropper into the solution until equilibrium of the balance is again restored; now add the remainder of the water.

To inhale, place a small portion of the liquid on a sponge. This is used in cases of croup.

Injection of Apomorphine, Hypodermic.

Apomorphine hydrochlorate.....gr. 2
 Camphor water.....m. 100

Dissolve and filter. This solution should be prepared only as wanted for use.—Brit. Pharm.

Injection of Curare, Hypodermic.

Curare gr. 5
Distilled water sufficient

Reduce the curare to powder in such a way as to prevent it from coming in contact with the naked hand or any other portion of the body, add distilled water to form a thin paste, transfer to a small funnel plugged with absorbent cotton, and gradually pour upon it distilled water until 1 fluidram is obtained.—Brit. Form.

Injection of Ergotin, Hypodermic.

Ergotin gr. 50
Camphor water fl.dr. 1½

Dissolve by stirring together.—Brit. Pharm.

Injection of Morphine, Hypodermic.

Morphine acetate gr. 12
Distilled water sufficient

Dissolve the morphine salt in 1½ fluidrams of water, and filter, adding through the filter enough water to make 2 fluidrams. If the morphine salt does not completely dissolve, add a drop or two of diluted acetic acid to the liquid before filtering.—Brit. Pharm.

Jelly, Currant. (Currant Paste.)

Take fully ripe currants, either red or black, whichever may be wanted; put them into a preserving pan, bruise them and place them on the fire, stirring constantly with a wooden spatula until they become scalding hot. When reduced to a pulp, remove them from the fire and strain and express all the juice from them through a flannel filtering bag or a crash towel. Measure the juice into a very clean and bright copper basin, or, still better, a porcelain-lined basin; place upon the fire and boil for 10 or 15 minutes in order to evaporate some of the water; remove the scum, and add one pound of sugar for each pint of juice. Stir constantly with a wooden spatula until the sugar is dissolved; then remove the scum and immediately fill the jelly glasses, or other suitable vessels.

This is used in making throat lozenges of certain kinds, such as have been used in the London Throat Hospital under the direction of Dr. Morell Mackenzie,

Juice, Elder. (Succus Sambuci. — Roob Sambuci. — Syrupus Sambuci. — Elder Berry Syrup.)

Take any desired quantity of freshly gathered elder berries, heat, with constant stirring, until they burst open, then express through flannel; evaporate the juice to a rather thick extract, and add to this powdered sugar in the proportion of 1 part by weight to every 9 parts by weight of the extract.—Austr. Pharm.

All application of heat must be over a water bath.

Juice, Huckleberry.

Huckleberries av.oz. 16
Water fl.oz. 8
Sugar av.oz. 1½

Heat the berries in a porcelain or enameled iron evaporating dish, on a water bath, for 1 hour, and express. Heat the residue for an hour with the water, express again, mix the two liquids, add the sugar and heat until dissolved. Strain through a fine cloth and then evaporate to thick extract. This is used sometimes, in domestic practice, in the treatment of the diarrhoea of children.—D.

Juice, Juniper. (Roob Juniperi.—Succus Juniperi.—Juniper Berry Syrup.—Syrupus Juniperi.)

Juniper berries, fresh, bruised. av.oz. 8
Water, hot. fl.oz. 32

Mix, stir frequently during 12 hours, express, and evaporate the liquid to a thin extract.—Germ. Pharm.

In the absence of fresh berries this preparation may be made from the ordinary dried berries, by the use of a larger proportion of water and a longer period of maceration.

Juice, Lemon, Artificial.

I. Citric acid av.oz. 1½
Potassium carbonate gr. 41
Water fl.oz. 14½

Mix the acid and potassium with the water, add the sugar when effervescence, then add the peel of a lemon; let stand for 24 hours, and strain.

II.

Citric acid gr. 525
Distilled water fl.oz. 14
Oil of lemon drops 10
Alcohol fl.oz. 1½

Dissolve the acid in the water and the oil

in the alcohol, mix the two solutions and filter.
—H.

Kali, Lemon.

Tartaric acid.....gr. 495
Sodium bicarbonate.....av.oz. 1½
Sugar.....av.oz. 5¼
Spirit of lemon.....sufficient to flavor

Kneipp's Remedies, Pastor.

Cough Tea (Hustentheee).—Coltsfoot leaves, 20 parts; nettle leaves, 10 parts; equisetum, 10 parts; fennel, 5 parts; juniper berries, 5 parts; snake plantain, 5 parts; mallow flowers, 5 parts; linden blossoms, 5 parts; mullein flowers, 2.5 parts; fenugreek, 2.5 parts.

Felon Oil (Malefizöl).—Croton oil, 1 part; oil of sweet almonds, 6 parts.

Blood Purifying Tea (Blutreinigungsthee).—Elder flowers, 10 parts; elder leaves, 10 parts; dwarf alder root, 10 parts; sandalwood, 10 parts; buckthorn bark, 10 parts; mistletoe, 10 parts; sloe blossoms, 5 parts; strawberry leaves, 5 parts; nettle leaves, 5 parts; juniper tops, 2½ parts.

Stomach Consoler (Magentrost).—St. John'swort leaves and flowers, 3 parts; millefoil, 1 part; juniper berries, 1 part; dog rose, 1 part; gentian root, 1 part; wormwood, ½ part; buckbean, ½ part; equisetum, ½ part; eye-bright, ½ part; little centaury, ½ part; peppermint oil, 1-10 part; alcohol, 60 p. c., 100 parts.

Wuehlhuberthee.—Aloes, 8 parts; fenugreek, 8 parts; fennel, 25 parts; juniper berries, 25 parts.

Eye-Bright (Augentrost).—Extract aloes, 1-5 part; fennel, 10 parts; eye-bright, 10 parts; alcohol, 20 parts; water, 80 parts.

Dropsy Tea (Wassersuchtssthee).—Equisetum, 40 parts; dog rose, 20 parts; rosemary, 10 parts; elder root, 10 parts; saffras, 10 parts; rue, 5 parts; buckbean, 5 parts; uva ursi, 5 parts; mistletoe, 5 parts; sandalwood, 5 parts; juniper berries, 5 parts.

Kneipp's Pills.—Rhubarb, 40 grams; extract aloes, 40 grams; soap, 10 grams; juniper berries, 8 grams; fenugreek, 3 grams; dwarf alder, 3 grams; fennel, 3 grams. Make into 600 pills.

Lard.

The adipose tissue adhering to the kidneys, mesentery and omentum of the hog is considered the source of the best lard. This is freed from all flesh, then cut into small pieces, removing, as far as possible, all bloody matter and the membranous tissue. Then heat in a tinned copper, porcelain, or enameled iron dish on a water bath until the fat is about all melted, and then strain.

Lard, Anhydrous.

Lard may be made perfectly anhydrous by heating the preceding on a water bath for about 80 minutes with about one-twelfth its weight of anhydrous or dry sodium sulphate in very fine powder, then filtering through paper, using some system of hot filtration to maintain the lard in a liquid state.

Lard prepared in this manner remains "sweet" much longer than the preceding.
—D.

Lard, Balsamic.

Lard, fresh.....av.oz. 16
Tolu balsam.....av.oz. 1½
Ether.....fl.oz. 1
Sodium sulphate, anhydrous...av.oz. 1½

Melt the lard and add it to the tolu dissolved in ether and the sodium sulphate, heat the mixture on a water bath for 1 hour, stir constantly, and finally filter by hot filtration.—D.

Lard, Benzoated.

Benzoic acid.....gr. 70
Lard.....av.oz. 16

Melt the lard on a water bath and dissolve the acid in it.—Germ. Pharm.

This is different from the U. S. P. benzoinated lard, which is made by inclosing coarsely powdered benzoin in a piece of muslin, suspending in melted lard, and heating for 2 hours to a temperature not above 60 degrees C.

Lards, Facticeous.

Quite a number of fats of animals, commonly called "greases," are demanded of pharmacists. Some of these lards or fats cannot be obtained, or at least with great difficulty, and as a rule they are prepared artificially. The formulas given herewith

will be found acceptable for preparing these "greases."

Goose Grease or Oil.

Olive oil.....	fl.oz. 1
Lard.....	av.oz. 4
Oil of nutmeg.....	drops 4

Dog's Fat or Grease.

Olive oil.....	fl.oz. 1
Lard.....	av.oz. 3

Castor Grease.

Lard.....	av.oz. 1
Tallow.....	av.oz. 1
Burgundy pitch.....	av.oz. 1
Castoreum powder.....	gr. 20

Cat's Fat.

Lard.....	av.oz. 1
Oil of valerian.....	drop 1

Rabbit Fat.

Olive oil.....	av.oz. 10
Lard.....	av.oz. 8
Beef suet.....	av.oz. 8
Yellow wax.....	av.oz. 4

Bear's Grease.

Olive oil.....	fl.oz. 4
Lard.....	av.oz. 12
Benzoic acid.....	gr. 60

Melt the lard at a gentle heat, add the oil and incorporate acid by stirring until uniform.

Other lards may be found under the head of "Oils," and "Suits."

Laudanum, Dutchman's.

Passion flowers.....	av.oz. 4
Rum.....	fl.oz. 16

Macerate for 7 days and express.

Liniment, A B C.

Liniment of aconite.....	fl.oz. 5½
Liniment of belladonna.....	fl.oz. 5½
Chloroform.....	fl.oz. 2¾
Camphor.....	gr. 288
Glycerin.....	fl.oz. 2¼

Liniment of Aconite.

Fluid extract of aconite.....	fl.oz. 10
Camphor.....	gr. 240
Alcohol, enough to make.....	fl.oz. 16

Mix the fluid extract and the alcohol, and in this mixture dissolve the camphor.—Brit. Pharm. modified.

Liniment of Aconite, Homeopathic.

Tincture of aconite, U. S. P.....	fl.dr. 4
Alcohol.....	fl.oz. 8
Glycerin.....	fl.oz. 8

Liniment of Amber Oil, Compound.

Rectified oil of amber.....	fl.oz. 3½
Oil of stillingia.....	fl.oz. 3½
Oil of lobelia.....	fl.dr. 10
Olive oil.....	fl.oz. 7

—Eclectic.

Liniment of Ammonia, Compound.

(Granville's Counter-Irritant.)

Stronger water of ammonia.....	fl.oz. 10
Spirit of camphor.....	fl.oz. 4
Spirit of rosemary.....	fl.oz. 2

Liniment, Anodyne.

Chloral.....	gr. 120
Camphor.....	gr. 120
Ether.....	fl.dr. 2
Chloroform.....	fl.dr. 2
Tincture of opium.....	fl.dr. 1
Oil of sassafras.....	fl.dr. 1
Soap liniment, enough to make.....	fl.oz. 16

Dissolve and mix.

Liniment, Arnica.

Tincture of arnica.....	fl.oz. 4
Soap liniment.....	fl.oz. 12

Liniment, Black.

Olive oil.....	fl.oz. 6
Sulphuric acid.....	fl.dr. 4
Oil of turpentine.....	fl.dr. 2

Add the acid very gradually, and with constant stirring, to the olive oil, allow to cool, and add the oil of turpentine.—Eclectic.

Liniment of Camphor, Compound.

(Compound Tincture of Camphor.)

(Rheumatic Liniment, Tincture or Drops.)

Camphor.....	av.oz. 2
Oil of origanum.....	fl.oz. 1
Oil of hemlock.....	fl.oz. 1
Oil of sassafras.....	fl.dr. 2
Oil of cajeput.....	fl.dr. 2
Oil of turpentine.....	fl.dr. 1
Powdered capsicum.....	av.oz. ½
Alcohol.....	fl.oz. 15

Mix, macerate for 7 days, and filter in a well-covered funnel.—Eclectic.

The British pharmacopoeia also recognizes a "compound liniment of camphor," which is directed to be prepared as follows:

Camphor.....	av.oz. 2
Oil of lavender flowers.....	m. 50
Stronger water of ammonia.....	fl.oz. 8¾
Alcohol.....	fl.oz. 11½

Dissolve the camphor and oil in the alcohol and add the ammonia gradually to this solution with constant shaking.

Liniment of Camphor. (Camphorated Oil.)

Camphor, coarse powder.....av.oz. $6\frac{1}{2}$
Cottonseed oil.....fl.oz. 28

Introduce the camphor and oil in a suitable flask, apply a gentle heat by means of a water bath, loosely stoppering the flask during the operation, and agitate from time to time till the contents of the flask are dissolved.—U. S. P.

Liniment, Cantharides.

Cantharides, powder.....av.oz. $2\frac{1}{4}$
Oil of turpentine.....sufficient

Digest the cantharides with 16 fluidounces of oil in a closed vessel on a water bath for 8 hours, then strain and add enough oil through the strainer to make the colature measure 16 fluidounces.—U. S. P. 1880 and N. F.

Liniment of Capsicum, Compound.

Tincture of capsicum.....fl.oz. 10
Tincture of opium.....fl.oz. 2
Ammonia water.....fl.oz. 2
Oil of origanum.....fl.dr. 10
Oil of cinnamon.....fl.dr. 5
Spirit of camphor.....fl.dr. 5

—Eclectic.

Liniment of Chloroform, Compound.

Chloroform.....fl.oz. 4
Oil of turpentine.....fl.oz. 4
Soap liniment.....fl.oz. 8

Liniment of Croton Oil.

Croton oil.....fl.oz. 2
Oil of turpentine.....fl.oz. 14

Liniment of Cajeput, Compound.

Oil of cajeput.....fl.dr. $4\frac{1}{2}$
Oil of spearmint.....fl.dr. $4\frac{1}{2}$
Tincture of opium.....fl.dr. 18
Soap liniment.....fl.oz. $18\frac{1}{4}$

Liniment, Diuretic.

Soap liniment.....fl.oz. 2
Tincture of digitalis.....fl.oz. 2
Tincture of squill.....fl.oz. 2

Liniment, Hungarian.

Cantharides, powder.....gr. 60
Garlic, sliced.....gr. 60
Camphor.....gr. 240
Mustard seed, bruised.....gr. 240
Black pepper.....gr. 240
Diluted acetic acid.....fl.oz. 6
Alcohol.....fl.oz. 12

Mix all, macerate for 7 days and filter.

Liniment of Mustard.

Volatile oil of mustard.....fl.dr. 2
Cottonseed oil.....fl.oz. 4

Liniment of Oils.

Oil of cedar.....fl.oz. 4
Oil of cajeput.....fl.oz. 4
Oil of cloves.....fl.oz. 4
Oil of sassafras.....fl.oz. 4

—Eclectic.

Liniment of Oils, Compound.

Oil of origanum.....fl.oz. 4
Oil of hemlock.....fl.oz. 4
Oil of cajeput.....fl.oz. 4
Camphor.....av.oz. 4
Capsicum, powdered.....av.oz. 2

Mix, macerate for 7 days, agitating occasionally, and filter in a well-covered funnel.—Eclectic.

Liniment of Opium. (Anodyne Liniment.)

Tincture of opium.....fl.oz. 8
Soap liniment.....fl.oz. 8

—Brit. Pharm.

Liniment of Opium, Ammoniated.

Soap liniment.....fl.oz. $4\frac{1}{4}$
Compound camphor liniment.....fl.oz. $4\frac{1}{4}$
Tincture of opium.....fl.oz. $4\frac{1}{4}$
Belladonna liniment.....fl.dr. $6\frac{1}{2}$
Stronger water of ammonia.....fl.dr. $6\frac{1}{2}$

Mix and filter.—Brit. Form.

Liniment of Petroleum, Compound.

Crude petroleum.....fl.oz. 12
Ammonia water.....fl.oz. 2
Tincture of opium.....fl.oz. 2
Camphor.....gr. 120

Mix and dissolve.—Eclectic.

Liniment of Stillingia, Compound.

Oil of stillingia.....fl.oz. 1
Oil of cajeput.....fl.dr. 4
Oil of lobelia.....fl.dr. 2
Alcohol.....fl.oz. 2

—Eclectic.

Liniment, Turpentine, Acid. (Brodie's Liniment.)

Sulphuric acid.....fl.dr. 1
Olive oil.....fl.oz. 1
Oil of turpentine.....fl.oz. 1

Add the acid gradually to the olive oil, stirring in a mortar; when the mixture is cold, add the oil of turpentine.

Liniment, Turpentine, Camphorated.

Oil of turpentine	fl.oz. 4
Acetic acid	fl.oz. 4
Liniment of camphor	fl.oz. 4

Other liniments are mentioned in Parts II and V.

Liniment, Thymol.

Thymol	av.oz. $\frac{3}{4}$
Spirit of soap	fl.oz. $18\frac{3}{4}$
Glycerin	fl.oz. $1\frac{1}{4}$

Dissolve the thymol in the spirit, add the glycerin, and filter.—D.

Lotion of Borax.**I. Abercrombie's:**

Borax	gr. 300
Diluted acetic acid	fl.oz. 8

II. Copeland's:

Borax	gr. 80
Rose water	fl.oz. 4
Orange flower water	fl.oz. 4

III. Johnson's:

Borax	gr. 160
Chalk, precipitated	av.oz. $1\frac{1}{4}$
Rose water	fl.oz. 4
Alcohol	fl.oz. 4

IV. Meig's:

Borax	av.oz. $\frac{1}{2}$
Morphine sulphate	gr. 6
Rose water	fl.oz. 8

Lotion, Bromine, Glover's.

Bromine	gr. 60
Water	fl.oz. 16

Lotion, Capsicum, Griffith's.

Tincture of capsicum	fl.oz. 4
Spirit of camphor	fl.oz. 4
Water of ammonia	fl.oz. 2

Lotion of Ether, Compound.

(Evaporating Lotion.)

Ether	fl.oz. 8
Alcohol	fl.oz. 8
Solution of ammonium acetate	fl.oz. 8
Rose water	fl.oz. 7

—Eclectic.

Lotion of Lead Chloride, Tuson's.

Chloride of lead	gr. 48
Water, boiling	fl.oz. 16

Lotion of Lobelia, Compound.

(Herpetic Wash.)

Bayberry bark	gr. 120
Lobelia herb	gr. 120
Lobelia seed	gr. 120
Yellow dock	gr. 120
Diluted acetic acid	sufficient

Extract the mixed drugs in moderately

fine powder with the acid by percolation so as to obtain 16 fluidounces of product.—Eclectic.

Lotion of Myrrh, Compound.

Myrrh, in coarse powder	gr. 120
Zinc acetate	gr. 45
Lead acetate	gr. 15
Water	sufficient

Pour 12 fluidounces of boiling water on the myrrh, let stand for 1 hour, stirring frequently; strain, add the salts dissolved in 4 fluidounces of water, and then enough water to make 16 fluidounces of product, and strain again, if necessary.—Eclectic.

Used as a collyrium.

Lotion, Red. (Red Wash.)

Zinc sulphate	gr. 40
Compound tincture of lavender	fl.dr. 1
Water	fl.oz. 16
Cochineal, coloring, N. F.	sufficient

Lotion of Sodium Chlorate, Darling's.

Sodium chlorate	gr. 300
Water	fl.oz. 8

Lotion of Sulphur, Compound.

(Taylor's Lotion.)

Sulphur, sublimed	gr. 360
Borax, powder	av.oz. 2
Spirit of camphor	fl.dr. 4
Glycerin	fl.dr. 6
Water	fl.dr. 12

Dissolve the borax in the water, add the spirit and then incorporate the mixture with the sulphur previously triturated to a smooth paste with the glycerin.

Lotion of Tin Chloride, Nouché's.

Tin chloride	gr. 8
Water	fl.oz. 16

Lotion, White. (White Wash.)

Sulphurated potassa (sulphuret of potash)	gr. 60
Zinc sulphate	gr. 60
Water	fl.oz. 4

Dissolve each in 2 fluidounces of water and mix the two solutions.

Marrow.

Take fresh marrow and heat on a water bath until quite thoroughly melted, then strain with expression, heat the liquid with a small amount of anhydrous sodium sulphate for about 80 minutes, stirring frequently, and filter by hot filtration.—D.

A factitious article may be prepared by

melting 1 part of oil of theobroma and adding 2 parts of fresh lard.—H.

Milk of Magnesia.

Magnesia, calcined, light.....	gr. 510
Glycerin.....	f.oz. 8½
Water.....	f.oz. 11½

Triturate the magnesia with the water, adding it gradually, and then add the glycerin.—D.

It may also be prepared from magnesium sulphate and alkali solution as follows:

Magnesium sulphate, crystal....	parts 6
Water.....	parts 20
Solution of potassa.....	sufficient

Dissolve, filter, heat to the boiling point, then gradually add, under constant stirring, solution of potassa enough to produce an alkaline reaction. Transfer the precipitate to a filter and wash thoroughly with hot water. Then, to the washed magma add sufficient cold water, previously deprived of air by boiling, to make the whole weigh 20 parts. One hundred parts contain 5 parts of anhydrous magnesia. It may also be prepared by the use of solution of soda. The alkali solution should be freshly prepared from pure materials.

Mixture of Bloodroot, Compound.

Syrup of ipecac.....	f.oz. 1
Syrup of squill.....	f.oz. 1
Syrup of tolu.....	f.oz. 1
Tincture of bloodroot.....	f.oz. 1
Paregoric.....	f.oz. 1

—Eclectic.

Mixture, A C E. (Chloroformum Mitigatum.)

Alcohol.....	1 by volume
Chloroform.....	2 by volume
Ether.....	8 by volume

Mixture, Castor Oil.

Castor oil.....	f.oz. 8
Oil of lemon.....	m. 40
Oil of cloves.....	drops 8
Simple syrup.....	f.dr. 6
Solution of potash.....	f.dr. 4½
Orange flower water, enough to make.....	f.oz. 8

Mix the oils in a mortar, then incorporate one-third of the solution of potash and afterward the syrup, then an additional third of the solution of potash, then gradually one-half of the orange flower water, the remain-

der of the solution of potash, and lastly sufficient solution of potash to produce the required volume.

Mixture, Cajeput, Compound.

(Hunnis Drops.)

Oil of cajeput.....	f.oz. 1
Oil of cloves.....	f.oz. 1
Oil of peppermint.....	f.oz. 1
Oil of anise.....	f.oz. 1
Alcohol.....	f.oz. 4

This has been employed in Eclectic practice in the treatment of diarrhoea, cholera, etc.

Mixture of Camphor, Compound.

Camphor water.....	f.oz. 5
Peppermint water.....	f.oz. 5
Spearmint water.....	f.oz. 5
Paregoric.....	f.dr. 10

—Eclectic.

Mixtures, Cholera or Diarrhoea.

I. Christensen's:

Chlorodyne.....	f.dr. 4
Paregoric.....	f.oz. 1
Tincture of opium.....	f.dr. 2
Tincture of catechu.....	f.oz. 1
Neutralizing cordial.....	f.dr. 10

II. Ebert's:

Solution of iron nitrate.....	f.dr. 2
Deodorized tincture of opium.....	f.dr. 2
Caraway water.....	f.dr. 4

Dose, from ½ to 1 teaspoonful after each evacuation.

III. Greenhow's:

Guaiaac.....	gr. 240
Cloves.....	gr. 240
Cinnamon.....	gr. 240
Brandy.....	f.oz. 16

Macerate the drugs in moderately fine powder with the brandy for 7 days, and filter.—Eclectic.

The dose is from a teaspoonful to a tablespoonful, in sweetened water, every 15 or 20 minutes until relief is obtained.

IV. Hamlin's (1):

Tincture of opium.....	f.oz. 1
Tincture of rhubarb.....	f.oz. 1
Spirit of camphor.....	f.oz. 1

V. Hamlin's (2):

Tincture of opium.....	f.oz. 1
Tincture of ginger.....	f.oz. 1
Tincture of capsicum.....	f.oz. 1
Tincture of cardamom.....	f.oz. 1

This is used in the second stage of cholera when there is threatened collapse.

VI. Harney's (Gen'l.):

Chloroform	fl.oz.	1
Tincture of opium	fl.oz.	1
Spirit of cinnamon	fl.oz.	1
Spirit of peppermint	fl.oz.	2
Camphor, powder	gr.	16
Syrup of ginger	fl.oz.	2
Mix and dissolve.		

VII. Loomis':

Tincture of opium	fl.dr.	4
Tincture of rhubarb	fl.dr.	4
Compound tincture of catechu	fl.oz.	1
Oil of sassafras	m.	20
Compound tincture of lavender		
enough to make	fl.oz.	4

—N. F.

VIII. Rubini's:

Camphor	av.oz.	1
Hoffmann's anodyne	fl.oz.	2
Dose: 2 to 5 drops on sugar every		20

minutes until relieved.

IX. Rademacher's:

Zinc acetate	gr.	90
Distilled water	fl.oz.	6
Mucilage of acacia	fl.oz.	1

X. Ruschenberger's:

Tincture of opium	fl.oz.	1
Spirit of camphor	fl.oz.	1
Tincture of capsicum	fl.oz.	1
Spirit of peppermint	fl.oz.	1
Aromatic tincture of rhubarb	fl.oz.	1
Dose: 30 to 40 drops in water.		

XI. Scammon's:

Tincture of opium	fl.dr.	3
Spirit of camphor	fl.dr.	3
Tincture of capsicum	fl.dr.	2
Diluted alcohol	fl.dr.	1

XII. Squibb's:

Tincture of opium	fl.oz.	1
Tincture of capsicum	fl.oz.	1
Spirit of camphor	fl.oz.	1
Chloroform	fl.dr.	8
Alcohol	fl.dr.	18

XIII. Sun:

Tincture of opium	fl.oz.	1
Tincture of capsicum	fl.oz.	1
Tincture of rhubarb	fl.oz.	1
Spirit of camphor	fl.oz.	1
Spirit of peppermint	fl.oz.	1
Mix them, and filter.		

XIV. Thielemann's:

Wine of opium	fl.oz.	1
Tincture of valerian	fl.oz.	1½
Ether	fl.dr.	4
Oil of peppermint	fl.dr.	1
Fluid extract of ipecac	m.	15
Alcohol	fl.dr.	1

This preparation is practically identical

with the Mistura Thielemanni of the Swedish Pharmacopœia.

XV. Velpeau's:

Tincture of opium	fl.oz.	2
Compound tincture of catechu	fl.oz.	2
Spirit of camphor	fl.oz.	2

Mixture, Copper, Rademacher's.

Tincture of copper acetate,		
(Rademacher's)	gr.	60
Mucilage of acacia	fl.dr.	4
Cinnamon water	fl.oz.	4½
Water	fl.oz.	2¾

Mixture, Iron, Rademacher's.

Tincture of iron acetate, Rade-		
macher's	fl.oz.	1½
Mucilage of acacia	fl.oz.	4
Water	fl.oz.	8

Mixture of Soda.

Fluid extract of rhubarb	fl.dr.	2
Tincture of cinnamon	fl.dr.	4
Brandy	fl.dr.	2
Sodium bicarbonate	gr.	60
Oil of cloves	drops	2
Simple syrup	fl.oz.	8
Water	fl.oz.	4

Mixture, Starton's.

Magnesium sulphate	gr.	360
Ferrous sulphate	gr.	60
Diluted sulphuric acid	fl.dr.	2
Syrup of wild cherry	fl.oz.	1
Water, enough to make	fl.oz.	4

This is given in teaspoonful doses to be taken after meals.

Mixture, Tonic, Compound.

(Mistura Alterantiæ Composita.)

Ferrous sulphate	gr.	40
Sodium phosphate	gr.	240
Quinine (alkaloid)	gr.	64
Strychnine (alkaloid)	gr.	4
Sugar	av.oz.	10
Diluted phosphoric acid	fl.oz.	9½
Distilled water		sufficient

Dissolve the sulphate of iron in 6 fluid-drams of boiling distilled water, also dissolve the sodium phosphate in 1½ fluidounces of boiling distilled water, and mix the 2 solutions; collect the precipitate and wash it with distilled water until the washings are tasteless; add this precipitate together with the quinine and strychnine to the diluted phosphoric acid, shake until dissolved, add the sugar, dissolve without heat and strain.

—Eclectic.

Mucilage of Irish Moss.

Irish moss.....gr. 192
Water, enough to makefl.oz. 16

Wash the moss with cold water, then place in a suitable vessel, add 16 fluidounces of water, and heat on a water bath for 15 minutes, frequently strain through muslin, and add enough water through the strainer to make the colature measure 16 fluidounces.—N. F.

Mucilage of Linseed.

Linseed, whole.....av.oz. 1
Distilled water, hot.....fl.oz. 5

Mix, macerate for 6 hours, stirring frequently, and strain.—D.

Mucilage of Quince Seed.

(Mucilage of Cydonium.)

Quince seed, whole.....gr. 144
Distilled waterfl.oz. 16

Mix, macerate for one-half hour, stirring frequently, and strain without expression.—N. F.

Mucilage of Starch.

Starchgr. 192
Distilled waterfl.oz. 16

Triturate the starch with water gradually added until a smooth paste is formed, then boil for a few minutes, constantly stirring.—Brit. Pharm.

Other mucilages will be noticed in Part VII.

Oil, Angeworm.

Angeworms, freed from adherent dirt.....part 1
Olive oil.....parts 2

Macerate for 8 days in a warm place, then strain or filter.

Oil, Anodyne.

Ammonia waterfl.dr. $3\frac{1}{2}$
Tincture of opium.....fl.dr. 10
Oleo-balsamic mixturefl.dr. 10
Alcoholfl.dr. 12
Infused oil of henbane, enough to makefl.oz. 16

Oil, Baunscheidt. (Compound Oil of Euphorbium.

Baunscheidt was a German charlatan who claimed to cure rheumatic and other diseases by means of what he called a "lebens-

wecker," i. e., "awakener" or "revulseur."

This consists of a number of sharp-pointed needles set in a bed of hard rubber. By means of a spiral-spring arrangement these needles are driven into the skin over the seat of pain, not deep enough to draw blood, while into the wounds produced is rubbed the "Baunscheidt oil." This is an irritating substance and produces papular eruptions similar to those produced by croton oil. The effect is that of a powerful counter-irritant. In medicine this treatment is known as acupuncture. Formulas for the oil are as follows:

I.

Euphorbium, powder.....gr. 160
Cantharides, powder.....gr. 96
Olive oil.....fl.oz. 8

Macerate for 7 days and filter.—H.

II.

Euphorbium, powder.....gr. 140
Mezereum, cut fine.....gr. 280
Cantharides, powder.....gr. 80
Alcoholfl.oz. 1
Ether.....fl.oz. $1\frac{1}{2}$
Olive oil.....fl.oz. 8

Mix the two powders, alcohol and ether in a closed vessel, macerate for 7 days, agitating occasionally; then add the oil, macerate again for 7 days, strain, heat the colature gently so as to expel the ether, and filter.—H.

Oil of Belladonna, Infused.

Prepare from belladonna leaves by the same process as infused oil of chamomile is prepared from chamomile.

Oil, Carminative. (Colic Oil.)

Oil of spearmint.....fl.dr. 5
Oil of carawayfl.dr. $2\frac{1}{2}$
Oil of cumin.....fl.dr. $2\frac{1}{2}$
Oil of fennel.....fl.dr. $2\frac{1}{2}$
Infused oil of chamomile, enough to make.....fl.oz. 16

—Norw. Pharm.

This is what is desired by Scandinavians when green oil is asked for, but Germans understand by this title the infused oil of henbane.

Oil of Chamomile, Infused.

Chamomile, coarse powder....av.oz. 3
Alcoholfl.oz. $2\frac{1}{2}$
Ammonia water.....drops 20
Olive oilfl.oz. 16

Mix the alcohol and water, and incorporate

quickly with the chamomile, set aside in a closed vessel for 24 hours, then add the oil, heat for 12 hours at a temperature of 50 to 60 degs. C. and strain with expression.

Oil, Chloroform.

Chloroformfl.oz. $3\frac{3}{4}$
Olive oil, enough to makefl.oz. 16

Oil, Cod Liver, Aromatized.

Oil of lemondrops 40
Oil of nerolidrops 8
Oil of peppermintdrops 8
Vanillingr. 1
Coumaringr. $\frac{1}{4}$
Cod liver oilfl.oz. 16

Dissolve the coumarin and vanillin in the volatile oils, with the aid of a very gentle heat, and mix the solution with the cod liver oil.—D.

Oil, Cod Liver, with Iodine. (Iodized Cod Liver Oil.)

Iodinegr. $7\frac{1}{2}$
Chloroformm. 15
Cod liver oilfl.oz. 16

Triturate the iodine with a few drops of oil, then add the remainder of the oil and the chloroform, transfer the whole to a bottle, and agitate frequently until dissolved.

Oil, Cod Liver, with Iron. (Ferrated Cod Liver Oil.)

I.
Iron benzoategr. 68
Cod liver oilfl.oz. 16

Triturate the iron salt with the oil and warm gently until the former is dissolved. The product contains 1 per cent of the iron salt.

II.

Castile soapgr. 75
Dialyzed ironfl.oz. $2\frac{1}{2}$
Distilled watersufficient
Sodium chlorideav.oz. 1
Cod liver oilfl.oz. 16

Dissolve the soap in 10 fluidounces of water by the aid of heat, also mix the iron solution with 9 fluidounces of water, add the latter liquid gradually to the soap solution (when cold), stirring constantly. Collect the precipitate without washing; place between folds of filter paper until tolerably dry, place in a porcelain or enameled iron evaporating dish with the salt and iron, heat on a water bath until solution takes place, and filter. The object of the salt is to abstract water

from the iron compound and thus facilitate its solution in the oil.—D.

This contains about $\frac{1}{2}$ per cent of ferric oleate.

III.

Ferric chloride, sublimedgr. 195
Cod liver oilfl.oz. 16

Triturate in a mortar until the iron salt is dissolved, and, if necessary, filter.

Oil, Cod Liver, with Iron and Iodine. (Ferro-Iodized Cod Liver Oil.)

Iodinegr. 80
Clean iron wiregr. 15
Cod liver oil, enough to makefl.oz. 16

Triturate the iodine, iron and 6 fluidounces of oil in a mortar with some ether until a black mixture results and the iodine and iron have combined; then add the remainder of the oil and filter.

The product contains $\frac{1}{2}$ per cent of ferrous iodide.

Oil, Cod Liver, with Malt Extract.

For cod liver oil with malt extract, refer to Extract of Malt with Cod Liver Oil.

Oil, Cod Liver, with Phosphorus. (Phosphorized Cod Liver Oil.)

This may be made by dissolving 4 grains of phosphorus in 16 fluidounces of cod liver oil by the aid of a gentle heat.

Oil of Conium, Infused.

This is to be prepared from conium herb by the same process as infused oil of chamomile is prepared from chamomile.

Oil, Eel, Factitious.

Oil of sweet almondsfl.oz. 8
Castor oilfl.oz. 8
Cod liver oilfl.dr. 6

—H.

Oil of Eggs.

This is obtained by subjecting hard-boiled yolk of eggs to pressure. About 1 fluidounce of oil is thus obtained from 16 yolks. The oil deteriorates very readily and must be preserved in dram-vials in a cool, dark place.

A factitious article may be prepared as follows:

Olive oilfl.oz. $12\frac{1}{2}$
Cacao butterav.oz. $2\frac{1}{2}$
Yellow waxav.oz. $\frac{1}{2}$

Melt together on a water bath.—H.

It may often be replaced by olive, sweet almond or other similar bland fixed oil.

Oil of Henbane, Infused.

This is to be prepared from henbane leaves by the same process as infused oil of chamomile is prepared from chamomile.

Oil of Lilies.

Oil of bergamot.....drops 16
Cottonseed oil, bleached.....fl.oz. 16

Oil, Rainworm, Artificial.

Oil of birch tar.....fl.dr. 5
Benne oil, enough to make.....fl.oz. 16

Oil of Rhodium, Factitious.

- I.
Oil of rose.....fl.dr. 1
Oil of copaiba.....fl.oz. 2½
- II.
Oil of rose.....drops 10
Oil of sweet almond.....fl.dr. 4
Balsam of copaiba.....fl.dr. 4

III.

Oil of rose.....fl.dr. 1
Oil of sandalwood.....fl.oz. 2½

Oil, Skunk.

Lard oil.....fl.oz. 8
Lard.....av.oz. 8
Animal oil.....drops 5

Oil of Spike. (British Oil.—Black Oil.)

- I.
Oil of amber, crude.....fl.dr. 10
Oil of turpentine.....fl.oz. 5
Linseed oil.....fl.oz. 5
American petroleum.....fl.oz. 5

II.

Olive oil.....fl.oz. 14
Oil of vitriol.....fl.oz. 2

Oil of Stramonium, Infused.

This is to be prepared from stramonium leaves by the same process as infused oil of chamomile is prepared from chamomile.

Oil of Wormwood, Infused.

This is to be prepared from wormwood by the same process as infused oil of chamomile is prepared from chamomile.

Ointment of Aconite.

Extract of aconite.....av.oz. 1
Simple ointment.....av.oz. 2

Soften the extract with water or diluted alcohol and mix well with the ointment.—Eclectic.

Ointment, Aconitine.

Aconitine.....gr. 8
Alcohol.....drops 32
Lard, benzoinated.....av.oz. 1

Dissolve the aconitine in the alcohol and add the lard.—Brit. Pharm.

Ointment Alkaline.

Potassium carbonate.....gr. 120
Tincture of opium.....fl.dr. 1
Simple ointment.....av.oz. 1

Triturate the potassium salt to an impalpable powder, mix with the ointment, and then add the tincture.—Eclectic.

Ointment, Alkaline, Camphorated.

Potassium carbonate.....gr. 20
Camphor, powder.....gr. 6
Lard.....gr. 420

Warm the lard, add the camphor, stir well till dissolved, and mix the potassium carbonate.—Eclectic.

Ointment, Ammoniacal.

Lard.....gr. 180
Suet.....gr. 120
Oil of sweet almond.....fl.dr. 1
Stronger water of ammonia (28 per cent or concentrated).....fl.dr. 6

Melt the lard and suet together, add the oil, and when the mixture is tolerably cool, pour it into a wide-mouth bottle, add the ammonia water, cork well, and shake occasionally until cold.—Eclectic.

Ointment, Antimonial. (Tartar Emetic Ointment.)

Tartar emetic.....gr. 100
Lard.....gr. 400

—U. S. P. 1870.

Ointment, Astringent, Thompson's.

Mutton suet.....av.oz. 8
Witch hazel or sumach leaves.....av.oz. 1

Melt the suet, boil with the leaves for one-half hour and strain.

Ointment, Bayberry. (Green Salve.)

Bayberry plaster.....av.oz. 4
Olive oil.....fl.oz. 1

Melt the plaster, add the oil, and stir until cool.—Eclectic.

This may also be prepared from:

Bayberry wax.....av.oz. 2
Gum turpentine.....av.oz. 2
Olive oil.....fl.oz. 1

Ointment, Atropine.

Atropine	gr. 8
Alcohol	drops 32
Lard, benzoinated	av.oz. 1

Dissolve the atropine in the alcohol and add the lard.—Brit. Pharm.

Ointment of Boric Acid.

I. Lister's formula is as follows:

Boric acid, fine powder	gr. 240
White wax	gr. 240
Paraffin	gr. 480
Oil of sweet almond	fl.oz. 1

Triturate the acid to a smooth paste with a portion of the oil, melt the paraffin, wax, and remainder of the oil together, and add the previous mixture.

II.

Boric acid	gr. 50
Petrolatum, white	gr. 450

Mix thoroughly.—Germ. Pharm.

II.

Boric acid	gr. 75
Petrolatum	gr. 450

Mix intimately.—Brit. Pharm.

Ointment, Calamine, Rademacher's.

Camphor, powder	gr. 110
Litharge	av.oz. 2
Armenian bole	av.oz. 2
Lead carbonate	av.oz. 2
Calamine, prepared	av.oz. 2
Yellow wax	av.oz. 3
Lard	av.oz. 12

Mix the litharge, lead carbonate, bole and calamine to a smooth paste with a portion of the lard, also melt the wax, to it add the remainder of the lard, add the previous mixture, mix the whole thoroughly, add the camphor and stir occasionally until solid.

Ointment, Casein, Unna's.

Casein	av.oz. 2¼
Potassium hydrate	gr. 23
Sodium hydrate	gr. 5
Glycerin	fl.oz. 1
Petrolatum	gr. 150
Zinc oxide	gr. 36
Carbolic acid	gr. 36
Water, enough to make	av.oz. 16

Prepare the casein as follows: Take milk from which the cream or fat has been entirely removed, curdle it by the addition of rennet extract, at a temperature of 30 to 40 degs. C.; collect the coagulum and wash with

running water or otherwise until the washings are no longer acid; dry carefully and powder.

Dissolve the alkalies in a portion of the water, and in this solution dissolve the casein; add the glycerin and carbolic acid, incorporate the petrolatum and zinc oxide, and finally the remainder of the water.

This is recommended by Unna as a vehicle to be used instead of fatty bodies for inunction.

Ointment of Conium.

Extract of conium	gr. 55
Simple ointment	av.oz. 1

Soften the extract with water or diluted alcohol and add the ointment.—Eclectic.

Ointment of Copper Subacetate.

Yellow wax	av.oz. 2¼
Lead plaster	av.oz. 8¼
Rosin	av.oz. 1½
Olive oil	fl.oz. 8½
Copper subacetate (verdigris)	av.oz. ½
Olibanum, finest powder	av.oz. 1½

Melt the wax, lead plaster and rosin together and add 7½ fluidounces of the oil. Intimately mix the verdigris with the remaining oil to a smooth paste, add this mixture to the previous one, stir well, add the olibanum, and stir frequently until cool.

Another ointment containing verdigris and known as green ointment is the following:

Verdigris, powdered	av.oz. 1
Resin cerate	av.oz. 15

Add the powder to the ointment, previously melted at a gentle heat, and stir the mixture frequently until it concretes.

Ointment, Creosote.

Creosote	fl.dr. 1
Lard	av.oz. 2

—Eclectic.

Ointment of Gallic Acid.

Gallic acid	av.oz. 1
Benzoinated lard	av.oz. 9

—U. S. P. 1880.

Ointment of White Hellebore.

White hellebore (veratrum album), powder	av.oz. 1
Lard	av.oz. 4
Oil of lemon	drops 10

Mix well.—Eclectic.

Ointment of Iodine, Rademacher's.

Iodine	gr. 90
Alcohol	sufficient
Lard	av.oz. 4

Dissolve the iodine in a little alcohol and add lard. The product contains about 4 per cent of iodine.

Ointment of Ipecac.

Ipecac, fine powder	av.oz. 1
Olive oil	fl.oz. 1
Lard	av.oz. 2

Mix well.—Eclectic.

Ointment, Lead, Hebra's. (Hebra's Diachylon Ointment.)

Lead plaster	av.oz. 1
Olive oil	fl.oz. 1

Mix at a gentle heat. Prepare only as needed.

According to the United States pharmacopœia lead ointment is scented with oil of lavender flowers. Sometimes the above ointment is made with linseed oil instead of olive oil.

Ointment of Lead Carbonate, Camphorated.

Camphor, fine powder	gr. 23
Lead ointment	av.oz. 1

Mix the camphor thoroughly with a portion of the ointment and then add the remainder of the ointment.—Germ. Pharm.

Ointment, Marshmallow. (Althæa Ointment.—Yellow Ointment.)

Turmeric, powder	gr. 180
Lard	av.oz. 14½
Yellow wax	gr. 420
Resin	gr. 420

Digest the turmeric in the lard for half an hour over a water-bath, then add the bees-wax and the resin previously melted together, melt the whole together, and strain the ointment.—Germ. Pharm.

Ointment, Lead, Compound. (Mayer's Ointment.)

Olive oil	fl.oz. 7
Gum turpentine	av.oz. 1½
Yellow wax	av.oz. ¾
Butter, unsalted	av.oz. ¾
Red lead	av.oz. 3
Honey	av.oz. 2
Camphor, powder	av.oz. 1½

Melt the wax and turpentine together, add

the butter and oil, heat nearly to boiling, and add gradually, with constant stirring, the red lead; allow to cool, and when nearly cold add the honey and camphor, stirring until the latter is dissolved.—Eclectic.

Ointment of Red Iodide of Mercury.

Red iodide of mercury	gr. 60
Simple ointment	av.oz. 1

—Brit. Pharm.

Ointment, Mezereum.

Lard	av.oz. 3
Yellow wax	gr. 200
Fluid extract of mezereum	fl.oz. 1

Melt the lard and wax together over a water bath, add the fluid extract and continue heating until all the alcohol has dissipated, meanwhile stirring constantly; then remove the ointment from the source of heat and stir frequently until cool.—U. S. P. 1880.

Ointment of Black Pepper.

Lard	av.oz. 4
Suet	av.oz. 1
Pine tar	av.oz. 4
Black pepper, fine powder	av.oz. 1

Melt the lard and tar together, then add the suet, and finally the pepper; stir frequently until cool.—Eclectic.

Ointment of Poke.

Extract of poke	gr. 60
Simple ointment	av.oz. 1

Soften the extract with a little water or diluted alcohol and add the ointment.—Eclectic.

Ointment of Potassium Sulphide.

Sulphurated potash	gr. 55
Sodium carbonate	gr. 55
Lard	av.oz. 1

Triturate the two salts to impalpable powder and then add the lard.—Eclectic.

Ointment, Rosemary, Compound.

(Unguentum Nervinum. — Aromatic Ointment.)

Yellow wax	av.oz. 1
Mutton suet	av.oz. 4
Lard	av.oz. 8
Expressed oil of nutmeg	av.oz. 1
Oil of rosemary	fl.dr. 4
Oil of juniper berries	fl.dr. 4

Melt the wax and suet, add the lard and nutmeg oil, stir till melted, allow to cool, then add the two volatile oils, and stir until well mixed.—Germ. Pharm.

Ointment of Shepherd's Purse, Rademacher's. (Unguentum Bursæ Pastoris Rademacheri.)

Shepherd's purse herb, freshly gathered.....av.oz. 8
Lardav.oz. 16

Contuse the shepherd's purse to a pulp, add it to the melted lard, and carefully heat the mixture over a direct flame until the moisture has all evaporated.

Ointment, Sulphur, Alkaline.

Sulphur, washedgr. 560
Potassium carbonate.....gr. 280
Waterfl.oz. 2½
Benzoinated lardav.oz. 4

Dissolve the potassium carbonate in the water, add the other ingredients, and mix well.—U. S. P. 1880.

Ointment of Sulphur, Compound.

Sulphurav.oz. 1
White hellebore (Veratrum album), fine powder.....gr. 72
Potassium nitrate, powdered.....gr. 10
Soft soap.....av.oz. 1
Ointment of poke.....av.oz. 3
Oil of bergamot.....drops 20

Mix well.—Eclectic.

Ointment of Sulphur Iodide.

I.
Iodide of sulphurgr. 30
Benzoinated lardav.oz. 1
Mix well.

II.
Sulphur iodide.....gr. 30
Petrolatumav.oz. 1
—Brit. Pharm.

Ointment, Thompson's. (Thompson's Salve.)

Yellow wax.....av.oz. 4
Butterav.oz. 4
Gum turpentineav.oz. 6
Balsam of fir.....av.oz. 3

Ointment of Tobacco.

Extract of tobacco.....gr. 48
Simple ointment.....av.oz. 4

Soften the extract with water or diluted alcohol and add the ointment.—Eclectic.

Ointment of Wild Indigo.

Fluid extract of wild indigofl.oz. 5
Butterav.oz. 2½
Beeswaxav.oz. 1
Tallowav.oz. ½

Melt the fats together, add the fluid ex-

tract, and continue heating carefully until all the alcohol and water have evaporated, meanwhile stirring frequently; allow to cool, stirring from time to time till nearly solid.—Eclectic.

Instead of the fluid extract of wild indigo, a corresponding amount of "solid" extract may be used; this should be softened with water or diluted alcohol after which the fats in melted state should be incorporated with it.

Ointment of Witch Hazel.

Fluid extract of witch hazel
barkm. 50
Simple ointmentgr. 410
—Brit. Pharm.

Ointment, Zinc, Compound. (Wilson's Ointment.)

Zinc oxide.....av.oz. 4
Benzoin, fine powder.....av.oz. 1
Lardav.oz. 15

Rub the zinc oxide and benzoin together, add to the lard, heat the whole on a water bath for one hour, stirring constantly; then strain, and allow to cool with frequent stirring.

Ointment of Zinc Oxide, Compound.

Olive oil.....av.oz. 4
Spermaceti.....av.oz. 2
White waxgr. 320
Zinc oxide.....av.oz. 1½
Benzoic acid.....gr. 20
Morphine sulphategr. 8
Oil of rosedrops 8

Triturate the zinc oxide, benzoic acid, morphine sulphate and olive oil to a smooth paste, add this to a melted mixture of the wax and spermaceti, stir almost constantly till cool, and then add the oil of rose.—Eclectic.

Ointment of Zinc Sulphate.

Zinc sulphate.....gr. 70
Simple ointmentgr. 420

Rub the zinc sulphate to an impalpable powder and add the ointment.—Eclectic.

The original contained fresh butter instead of the ointment and the former may be used if desired.

Other ointments will be noted in Parts II and V.

Oleate of Morphine.

Morphine (alkaloid)gr. 87
Oleic acidfl.oz. 4

Triturate the morphine to fine powder,

add to the oleic acid, and dissolve by the aid of a gentle heat.

The above makes a preparation containing 5 per cent of alkaloid. If stronger preparations are desired, relatively greater proportions of alkaloid must be used. A 10 per cent oleate, for instance, would require the use of 175 grains of morphine.

Oleate of Strychnine.

Strychnine (alkaloid)gr. 35
Oleic acidfl.oz. 4

Triturate together, dissolving by the aid of a gentle heat, if necessary.

The product contains 2 per cent of strychnine.

Oxymel.

Acetic acidfl.oz. 1
Waterfl.oz. 1
Clarified honey.....av.oz. 8

—Brit. Pharm.

Paste, Carbolic, Lister's.

Carbolic acid, crystalav.oz. 4½
Olive oilfl.oz. 10
Prepared chalk.....sufficient

Dissolve the acid in the oil and add sufficient chalk to make a soft paste.—D.

Paste, Lassar's.

Salicylic acid.....gr. 72
Zinc oxide.....av.oz. 1
Starchav.oz. 1
Petrolatumav.oz. 2

Paste, Wax.

Yellow wax.....av.oz. 4½
Cocoanut oilav.oz. 1¼
Lanolingr. 270
Borax, powder.....gr. 70
Distilled waterfl.oz. 9½

Melt the wax, add the oil, and then the lanolin, and after allowing to cool somewhat incorporate the borax dissolved in the water. This is used as an ointment vehicle.—D.

Physic, White Liquid. (Dow's Physic.)

Sodium sulphate.....av.oz. 4
Waterfl.oz. 12
Nitric acidfl.dr. 4
Hydrochloric acidfl.dr. 4
Alumgr. 80

Dissolve the sodium sulphate in the water, filter, and add the other ingredients.—Eclectic.

Pills, Anti-Canker, Thompsonian.

Each pill should contain:

Iron subcarbonate.....gr. 2¼
Extract of conium.....gr. 2¼

Pills, Anti-Catarrhal, Andrews'.

(Anti-Grippe or Yellow Pills.)

Each pill should contain:

Quinine salicylategr. 1
Arsenious acid.....gr. ʒi
Extract of belladonna leaves.....gr. ʒi

Pills, Anti-Constipation, Carson's.

Each pill should contain:

Extract of cascara sagradagr. 1
Extract of rhubarbgr. 1
Extract of nux vomicagr. ¼
Extract of aloin.....gr. ⅓

Pills, Anti-Constipation, Fothergill's.

Each pill should contain:

Strychninegr. ʒi
Aloesgr. 1¼
Black peppergr. 1¼
Extract of cascara sagrada.....gr. 1½

Pills, Arsenic, Hebra's.

Each pill should contain:

Arsenious acid.....gr. ʒi
Extract of licorice, driedgr. ¼
Licorice wood, powder.....gr. ¼
Mucilage of acacia sufficient to form mass.
Roll in lycopodium.—D.

Pills of Camphor, Compound.

(Cholera Pill.)

Each pill should contain:

Camphorgr. 1
Opiumgr. 1
Kinogr. 1
Capsicumgr. ʒi
Confection of rose, sufficient to form a mass.

Pills, Cook's.

Each pill should contain:

Rhubarb.....gr. 1
Aloesgr. 1
Calomel.....gr. ¼
Soap, powdered.....gr. ¼

Pills, Gout, Lartigue's.

Each pill should contain:

Extract of colocynth, compound...gr. 4
Extract of digitalis.....gr. ʒi
Extract of colchicum root.....gr. ʒi

Pills, Tonic, Aiken's.

Each pill should contain:

Quinine sulphategr. 1
Arsenious acid.....gr. ʒi
Reduced iron.....gr. ⅓
Strychninegr. ʒi

Pills of Zinc Acetate, Rademacher's.

Each pill should contain:

Zinc acetate	gr. 3
Licorice root	gr. 1

Plaster, Bayberry. (Green Plaster.)

Gum turpentine	av.oz. 4
Bayberry wax	av.oz. 4

Melt together, strain, and stir until cool.—Eclectic.

Plaster, Logan's.

Lead oxide	av.oz. 2
Lead carbonate	av.oz. 2
Soap	av.oz. 1½
Butter, fresh	gr. 240
Olive oil	fl.oz. 5
Mastic	gr. 20

Mix the soap, oil and butter, add the lead oxide, and boil the whole gently for an hour and a half or until it has acquired a pale brown color, stirring constantly meanwhile; the heat may then be increased and the boiling continued till a portion of the melted plaster dropped on a smooth board is found not to adhere; then remove the vessel from the fire and add the mastic to the mixture.

Plaster, Menthol.

I.	
Lead plaster	av.oz. 7½
Yellow wax	av.oz. 1
Resin	av.oz. ½
Menthol	av.oz. 1

Melt the plaster, wax and resin, strain and as the mixture cools, add the menthol. Spread the composition on cloth or leather.—D.

II.	
Menthol	av.oz. 3¼
Yellow wax	av.oz. 1½
Resin	av.oz. 11¼

Melt the resin and wax together, and as the mixture cools, stir in the menthol until dissolved.—Brit. Pharm.

The first plaster contains 10 per cent of menthol. the second 20 per cent.

Plaster. Miraculous, Rademacher's.

Red lead	av.oz. 4
Olive oil	av.oz. 9
Amber, powder	gr. 96
Camphor, powder	gr. 60
Burnt alum	gr. 30

Boil the lead and oil until a black plaster

is formed, allow this to cool somewhat, add the other ingredients and mix well.

Plaster, Resin, Compound. (Adhesive and Strengthening Plaster.)

Resin	av.oz. 9
Beeswax	av.oz. 1
Camphor	gr. 60
Oil of hemlock	fl.dr. 2
Oil of sassafras	fl.dr. 2
Oil of turpentine	fl.dr. 1
Olive oil	fl.dr. 2

Melt the resin and wax together, allow to cool, and while still liquid add the camphor dissolved in the oils.—Eclectic.

Plaster, Thapsia.

Yellow wax	av.oz. 6½
Resin	av.oz. 2½
Gum turpentine	av.oz. 2½
Venice turpentine	av.oz. 3
Glycerin	fl.dr. 5
Honey	fl.dr. 5
Resin of thapsia	gr. 510

Melt the first three ingredients and add the others, and stir until a plaster mass is formed.—Codex.

Pomade, Juniper.

Lard	av.oz. 6½
Paraffin wax	gr. 240
White wax	gr. 60
Oil of juniper berries	fl.dr. 3
Fowler's solution	fl.dr. 2

Melt the two waxes, then add the lard, remove vessel from the fire, add the other ingredients, and stir well until cold.—Eclectic.

Powder, Antimonial, Tyson's.

I.	
Antimony oxide	av.oz. 1
Calcium phosphate	av.oz. 9

II.	
Antimony oxide	av.oz. 1
Calcium phosphate	av.oz. 4½
Potassium sulphate	av.oz. 4½

These powders are given in doses of 5 or 10 grains.

Powder, Arsenical, Come's.

Red sulphide of mercury	av.oz. 6
Arsenious acid	av.oz. 2
Dragon's blood	gr. 260
Charcoal, animal	gr. 175

Triturate together to a very fine powder.

Powder, Black. (Emmenagogue Powder.)

Sulphur	av.oz. 1
Myrrh	av.oz. 1
Steel filings.....	av.oz. 1
Loaf sugar	av.oz. 1
White wine.....	fl.oz. 4

Mix, and, by aid of a gentle heat, evaporate till nearly dry; pulverize the mass when cold.—Eclectic.

This is the formula as originally given. The substance is best dispensed in pill form.

Powder of Camphor, Compound.

Tannic acid	gr. 120
Kino	gr. 120
Camphor	gr. 120
Opium.....	gr. 60

Each should be in fine powder and the whole should be well mixed.—Eclectic.

Powder of Charcoal, Compound.

Wood charcoal	av.oz. 4
Rhubarb	av.oz. 2
Sodium bicarbonate.....	av.oz. 1

All should be in fine powder and the whole well mixed.—Eclectic.

Powder, Cough, Thompsonian.

Lobelia herb.....	av.oz. 2
Licorice root.....	av.oz. 2
Skunk cabbage.....	av.oz. 2
Sugar	av.oz. 2

All should be in fine powder and be well mixed.

Powder of Oxyripedium, Compound.

Refer to Compound Powder of Ladies' Slipper.

Powder, Dover's, Camphorated.

(Beach's Diaphoretic Powder.)

Opium	gr. 55
Ipecac	gr. 110
Camphor	gr. 220
Potassium bitartrate.....	av.oz. 2

All should be in powder and should be well mixed.—Eclectic.

Powders, Effervescent.

See Effervescent Salts.

Powder, Effervescing. (Pulvis Aerophorus.)

Sodium bicarbonate.....	av.oz. 2½
Tartaric acid	av.oz. 2¼
Sugar	av.oz. 4¼

All should be in fine powder and perfectly

dry, and should then be well mixed.—Germ. Pharm.

Preserve in well-stoppered bottles in a dry place.

Powder, Effervescing, with Magnesia.

I. Tartaric acid.....	av.oz. 1
Oil-sugar of lemon.....	av.oz. 2
Sugar, moderately fine powder.....	av.oz. 8
Magnesium carbonate.....	av.oz. 4

—Germ. Form.

II.

Tartaric acid.....	av.oz. 1
Citric acid	av.oz. 2
Sugar	av.oz. 8
Magnesium carbonate.....	av.oz. 4

Prepare and preserve like the preceding.

—D.**Powder of Glycyrrhizin, Aromatic.**

Ammoniated glycyrrhizin.....	gr. 120
Oil of caraway.....	drop 1
Oil of coriander.....	drop 1
Oil of anise	drops 2
Oil of cassia.....	drops 2

Adapted for disguising taste of quinine in powder.

Powder of Golden Seal, Compound.

Golden seal.....	av.oz. 2
Blue cohosh.....	av.oz. 2
Helonias	av.oz. 2

Reduce to fine powder.—Eclectic.

Powder, Gun. (Pulvis Pyrius.—Pulvis Nitratis.)

Potassium nitrate.....	av.oz. 15
Charcoal	av.oz. 8
Sulphur	av.oz. 2

When gunpowder is required for veterinary recipes, it may be prepared extemporaneously according to this formula.

Powder, Gun, White.

Potassium ferrocyanide.....	av.oz. 1
Sugar	av.oz. 1
Potassium chlorate.....	av.oz. 2

Reduce each to powder separately, then mix well, but very carefully, using a bone or wooden spatula.

Powder of Ladies' Slipper, Compound. (Nerve Powder.)

Ladies' slipper	av.oz. 2
Pleurisy root.....	av.oz. 2
Skunk cabbage.....	av.oz. 2
Scullcap	av.oz. 2

Reduce to fine powder.—Eclectic.

Powder of Ipecac, Compound.

Ipecac	av.oz. 2
Pleurisy root.....	av.oz. 2
Blood root.....	av.oz. 2
Potassium nitrate.....	av.oz. 2

Reduce to fine powder.—Eclectic.

This preparation is, of course, not to be confused with the official Dover's powder which was at one time known by the name "Pulvis Ipecacuanhæ Compositus."

Powder, Laxative, Gregory's.

Ginger	av.oz. 1
Rhubarb	av.oz. 2
Magnesium carbonate.....	av.oz. 8

Each should be in fine powder, and the whole should be mixed intimately.

Dose, one-half to one teaspoonful.

Powder, Nephritic, Rademacher's.

Cochineal, powder.....	av.oz. 1
Calcined magnesia.....	av.oz. 4

Powder, Nerve, Thompsonian.

This is powdered cypripedium or ladies' slipper root.

Powder of Opium, Compound.

Opium.....	av.oz. $\frac{3}{4}$ (gr. 828)
Black pepper.....	av.oz. 1
Ginger	av.oz. $2\frac{1}{2}$
Caraway	av.oz. 3
Tragacanth.....	gr. 110

All should be in powder and should be well mixed.—Brit. Pharm.

Powder of Phosphates, Compound.

Sodium phosphate.....	gr. 240
Precipitated calcium phosphate.....	gr. 240
Precipitated iron phosphate.....	gr. 240
Sugar, powder.....	gr. 480

Expose the sodium phosphate to heat, in a porcelain dish, until the water of crystallization is dispelled, then add the other ingredients and mix well.

Powder of Pink Root, Compound.

(Entozoic Powder.)

Pink root.....	av.oz. 1
Bitter root (dogbane).....	av.oz. 1
Swamp milkweed (Asclepias incarnata).....	av.oz. 1
Podophyllum.....	av.oz. 1
Balmomy	av.oz. 2

All should be in fine powder and the whole well mixed.—Eclectic.

Powder of Pleurisy Root, Compound.

Pleurisy root	av.oz. 2
Spearmint	av.oz. 2
Sumach berries.....	av.oz. 2
Bayberry bark.....	av.oz. 1
Skunk cabbage.....	av.oz. 1
Ginger	av.oz. $\frac{1}{2}$

All should be in powder and should be well mixed.—Eclectic.

Powder of Podophyllin, Compound.

Podophyllin	gr. 10
Cream of tartar	gr. 450

Mix well.—Eclectic.

Powder of Podophyllum, Compound.

Blue flag	av.oz. 2
Podophyllum	av.oz. 2
Dogbane (or bitter root).....	av.oz. 2
Swamp milkweed (Asclepias incarnata).....	av.oz. 2
Blood root.....	av.oz. 1

Reduce to fine powder.—Eclectic.

Powder of Quinine, Compound.

Quinine sulphate	av.oz. 1
Iron ferrocyanide.....	av.oz. 1

Reduce to fine powder.—Eclectic.

Powder of Rhubarb, Compound.

(Neutralizing Powder.)

Rhubarb	av.oz. 4
Potassium bicarbonate	av.oz. 4
Peppermint	av.oz. 4

Each should be in fine powder and the whole should be well mixed.—Eclectic.

Powder of Senna, Compound.

Senna powder.....	av.oz. 6
Cream of tartar.....	av.oz. 6
Scammony, powder	av.oz. 3
Ginger, powder	av.oz. $1\frac{1}{2}$

Powder, Styptic. (Red Powder.)

Iron sulphate, powdered.....	av.oz. 2
Alum, powdered.....	av.oz. 1

Mix them and apply strong heat until a reddish product is obtained; pulverize when cold.—Eclectic.

Powder of Sulphur, Compound.

Sulphur	av.oz. $8\frac{1}{2}$
Potassium bitartrate.....	av.oz. $6\frac{1}{2}$
Magnesium carbonate.....	av.oz. $2\frac{3}{4}$
Sugar	av.oz. $8\frac{1}{2}$
Oil of fennel.....	fl.dr. 1

Rademacher's Preparations.

Rademacher was a physician who lived about one hundred years ago in Germany. He entertained peculiar ideas regarding the

practice of medicine, as well as the preparation and action of drugs. Many of his peculiar preparations are prescribed in this country by the older German physicians, and more recently some of them have been employed by physicians partial to the eclectic school.

This class of preparations includes the following:

1. Drops, Dysmenorrhœa.
2. Extract of Tobacco.
3. Mixture, Copper.
4. Mixture, Diarrhœa.
5. Mixture, Iron.
6. Ointment, Calamine.
7. Ointment, Iodine.
8. Ointment, Shepherd's Purse.
9. Pills, Zinc Acetate.
10. Plaster, Miraculous.
11. Powder, Nephritic.
12. Solution of Calcium Chloride.
13. Solution of Sodium Nitrate.
14. Solution, Anodyne Turpentine.
15. Tincture of Celandine.
16. Tincture of Cochineal.
17. Tincture of Colocynth.
18. Tincture of Copper Acetate.
19. Tincture of Golden Rod.
20. Tincture of Hips.
21. Tincture of Iron Acetate.
22. Tincture of Mary Thistle.
23. Tincture of Mugwort Root.
24. Tincture of Nux Vomica.
25. Tincture of Shepherd's Purse.
26. Water, Acorn.
27. Water, Castor.
28. Water, Nux Vomica.
29. Water, Quassia.
30. Water, Tobacco.

Formulas for making these preparations may be found elsewhere in Part I.

Resinoids.

Refer for these to Concentrations.

Salts, Effervescent.

The effervescent salts or powders, for which formulas are here given, are most conveniently and efficiently dispensed in the form of fine powders, because in this condition they can be made extemporaneously and with an assurance of their freshness and efficiency. The popular demand, however, seems to be

for granular effervescent salts, the preparation of which requires certain modifications of the formulas, important only in so far as they enable the dispenser to granulate the powder in a convenient and expeditious manner.

Effervescent powders or salts are composed of the medicinal agent in admixture with an alkaline bicarbonate, an organic acid, and sugar. The proportion of the medicinal agent is dependent upon its dose, that of the alkaline bicarbonate and of the organic acid is dependent upon their molecular relation to each other, while the proportion of sugar is dependent upon the quantity necessary as a sweetening agent and diluent.

The ingredients for making the fine pulverulent form of effervescent powders are: The medicinal agent, sodium bicarbonate, tartaric acid and sugar, and it is necessary that these be well dried before mixing them.

To make the granular form of effervescent salts the ingredients need not be dried, unless specially directed, and the ingredients are the same as for the pulverulent form, with the single exception that one-half the molecule of tartaric acid is replaced by one-half a molecule of powdered citric acid.

In order to facilitate the manufacture of effervescent salts, the new National Formulary recognizes three new preparations, viz.: saccharated citric acid, saccharated tartaric acid, and saccharated sodium bicarbonate.

Saccharated citric acid is prepared by mixing 5 av. ounces of citric acid with 8 av. ounces of sugar, each to be in very fine powder.

Saccharated tartaric acid is prepared by mixing $6\frac{1}{2}$ av. ounces of tartaric acid with $3\frac{1}{2}$ av. ounces of sugar, each to be in very fine powder.

Saccharated sodium bicarbonate is prepared by mixing 6 av. ounces of sodium bicarbonate with 2 av. ounces of sugar, each to be in very fine powder.

The ingredients of these preparations should be intimately mixed, and should be preserved in well-stoppered bottles.

The proportion of sugar in these saccharates is so adjusted that when either of the acid saccharates is mixed with an equal weigh-

of the alkaline saccharate, the acid and alkali are in molecular relation to each other, and, when dissolved in water, will form the neutral tartrate and citrate of sodium respectively.

With these three saccharates in stock, it becomes possible to make effervescent powders or salts quickly with any medicinal agent that may be prescribed, their use being exemplified by the following general formulas:

I. Fine Powder:

Medicinal agent, fine powder.	av.oz. 2
Saccharated sodium bicarbonate.	av.oz. 19
Saccharated tartaric acid.	av.oz. 19

Triturate the ingredients until a uniformly mixed powder is obtained. In order to insure permanence of the product, the ingredients should be well dried before mixing.

II. Granular Salt:

Medicinal agent, fine powder.	av.oz. 2
Saccharated sodium bicarbonate.	av.oz. 19
Saccharated tartaric acid.	av.oz. 9½
Saccharated citric acid.	av.oz. 9½

Mix the ingredients (not dried) in a mortar, transfer them to an evaporating dish, and heat on a water bath, kept at 60 to 71 degrees C., under constant stirring with a wooden spatula, until dry and uniformly granular.

The saccharated citric acid, being made from crystallized citric acid containing one molecule of water of crystallization, supplies the moisture necessary to cause the powder, when heated, to cake and adhere together. If the somewhat pasty mass is then stirred with the spatula, small granules are readily formed, and these become firm when completely dried.

Another method of making the granular effervescent salts is to add to either of the above mixtures just enough alcohol to form a pasty mass, then rubbing this through a No. 20 porcelain colander, and drying the product in a drying room at a gentle heat. The alcohol used should be just sufficient to form a pasty mass, as an excess would make the drying require a longer period of time, and at the same time would prove a serious waste.

The alcohol method of making efferves-

cent salts is recognized by the U. S. P., the heat method by the N. F.

It is, of course, not always that the proportion of the ingredients is the same as in the above general formulas. There may, for example, be more or less of the medicinal agent, and it may be necessary to add an extra amount of sugar. It is not necessary, either, to use any of the saccharates mentioned, the alkaline bicarbonate, acid, sugar and medicinal agent or agents.

Throughout the process of making these "salts," contact with metals should be carefully avoided. The mixtures should always be preserved in well-stoppered, wide-mouthed bottles.

The following formulas for effervescent salts are taken from standard works of reference:

Caffeine, Citrated.

Caffeine.	gr. 110
Citric acid.	gr. 110
Sodium bicarbonate.	av.oz. 8½
Tartaric acid.	av.oz. 7½
Sugar.	av.oz. 8¾

To be granulated (according to U. S. P.) by the alcohol process. It may also be made according to the N. F., or heat, process. It may also be dispensed in powder form.

Carlsbad Salt, Artificial.

Artificial Carlsbad salt.	av.oz. 4½
Saccharated sodium bicarbonate.	av.oz. 10½
Saccharated tartaric acid.	av.oz. 10½

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained. If desired in the granular form, substitute saccharated citric acid, not dried, for one-half of the saccharated tartaric acid, and prepare the granulated compound as directed under the general formula.—N. F.

A solution of about 87 gr. of this preparation in 6 fluidounces of water represents an equal volume of Carlsbad water (Sprudel) in its essential constituents.

Iron Citrate.

Iron pyrophosphate, soluble.	av.oz. 2
Citric acid.	av.oz. 5
Sodium bicarbonate.	av.oz. 5
Sugar.	av.oz. 10

Triturate the iron salt to powder, add the other ingredients, mix thoroughly in a porcelain mortar, and gently heat the whole

(with mortar) on a water bath, triturating constantly until a moist mass is formed, which agglutinates sufficiently so it may be passed through a sieve. Then dry and bottle the product in the usual manner.—Germ. Form.

Iron citrate, soluble.....	av.oz. 1
Sodium bicarbonate.....	av.oz. 10
Tartaric acid.....	av.oz. 7
Citric acid.....	av.oz. 1
Sugar.....	av.oz. 8
Alcohol.....	fl.oz. 7

Reduce the iron salt to very fine powder, add the other solids in fine powder, mix well, warm slightly in an evaporating dish, moisten with the alcohol, and sift dry, and bottle in the usual manner.—D.

Properly speaking, the first "iron citrate" is not a citrate, but a pyrophosphate.

Iron Citrate with Magnesia; or iron and magnesium citrate.

Iron citrate, soluble.....	av.oz. 1
Magnesium carbonate.....	gr. 220
Sodium carbonate.....	av.oz. 10
Tartaric acid.....	av.oz. 8
Citric acid.....	av.oz. 1½
Sugar.....	av.oz. 8
Alcohol.....	fl.oz. 7

Prepare like the preceding.—D.

Iron and Quinine Citrate.

Soluble citrate of iron and quinine.....	gr. 97
Saccharated sodium bicarbonate.....	av.oz. 11
Saccharated tartaric acid.....	av.oz. 11

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained. If desired in the granular form, saccharated citric acid may be substituted for one-half of the tartaric acid, then follow the rules of the general formula.—N. F.

Ninety gr. (or about a heaped teaspoonful) of this preparation represent about 1 gr. of citrate of iron and quinine.

Iron Phosphate.

Iron phosphate, soluble, very fine powder.....	gr. 215
Saccharated sodium bicarbonate.....	av.oz. 10
Saccharated tartaric acid.....	av.oz. 10

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained. If desired in the granular form, follow the rules of the general formula, substituting saccharated citric acid for one-half

the saccharated tartaric acid, heating, etc.—N. F.

Ninety gr. (about a heaped teaspoonful) represent about 2 gr. of iron phosphate.

Iron Pyrophosphate.

See Iron Citrate above.

Kissingen Salt, Artificial.

Artificial Kissingen salt.....	av.oz. 7
Saccharated sodium bicarbonate.....	av.oz. 9
Saccharated tartaric acid.....	av.oz. 9

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained. If desired in the granular form, follow the general formula by substituting saccharated citric acid for one-half the saccharated tartaric acid, heating, etc.—N. F.

A solution of about 80 gr. of this preparation in 6 fluidounces of water represents an equal volume of Kissingen water (Rackoczi springs) in its essential constituents.

Lithium Carbonate.

Lithium carbonate.....	av.oz. 2
Sodium bicarbonate.....	av.oz. 6
Tartaric acid.....	av.oz. 4
Sugar.....	av.oz. 8
Alcohol.....	fl.oz. 9

Mix the solids, and moisten and sift in the regulation manner. Dry first at 20 degrees C., then increase the temperature to 40 degrees C., until perfectly dry.—D.

Lithium Citrate.

Lithium citrate.....	av.oz. 2
Sodium bicarbonate.....	av.oz. 6
Tartaric acid.....	av.oz. 4
Milk sugar.....	av.oz. 4
Sugar.....	av.oz. 4
Alcohol.....	fl.oz. 9

Prepare like the preceding.—D.

Magnesium Citrate.

Magnesium carbonate.....	av.oz. 2½
Citric acid.....	av.oz. 11½
Sodium bicarbonate.....	av.oz. 8½
Sugar.....	av.oz. 2
Alcohol.....	
Distilled water.....	of each, sufficient

Mix the magnesium carbonate with 7½ av. ounces of citric acid and 1 fluidounce of water, so as to form a thick paste. Dry this at a temperature not exceeding 80 degrees C., and reduce to fine powder. Then mix this intimately with the sugar, sodium bicarbonate, and the remainder of the citric acid,

dampen with alcohol, and granulate and dry.
—U. S. P.

This preparation may also be prepared according to either of the N. F. processes, by mixing the powdered magnesium citrate, obtained in this formula, with the saccharates, and heating, if desired.

Magnesium Sulphate.

Magnesium sulphate, crystal.....	av.oz. 25
Sodium bicarbonate.....	av.oz. 18
Tartaric acid.....	av.oz. 9½
Citric acid.....	av.oz. 6½
Sugar.....	av.oz. 5½

Dry the magnesium salt at a temperature of about 55 degrees C., until it has lost nearly one-fourth (23 per cent) of its weight; powder the product, and mix with the sugar and other ingredients, all in fine powder. Then granulate the mixture by the heat method.—Brit. Pharm.

Pepsin.

Pepsin, pure, powdered.....	gr. 150
Citric acid.....	av.oz. 5¾
Tartaric acid.....	av.oz. 5
Sodium bicarbonate.....	av.oz. 12½
Sugar.....	gr. 720

Make by the U. S. P. process, or it may be prepared by either of the N. F. processes.

Pepsin and Bismuth.

Pepsin, pure, powdered.....	gr. 150
Citrate of bismuth and ammonium.....	gr. 150
Citric acid.....	av.oz. 5¾
Tartaric acid.....	av.oz. 4½
Sodium bicarbonate.....	av.oz. 12½
Sugar.....	gr. 720

Prepare like the preceding.

Potassium Bromide.

Potassium bromide, very fine powder.....	av.oz. 3
Saccharated sodium bicarbonate.....	av.oz. 12
Saccharated tartaric acid.....	av.oz. 12

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained. If desired in the granular form, follow the general formula by substituting saccharated citric acid for one-half the saccharated tartaric acid, heating, etc.—N. F.

Ninety gr. (or about a heaped teaspoonful) of this preparation represent about 10 gr. of potassium bromide.

Potassium Bromide, with Caffeine.—N. F.

Prepare this like the preceding, adding 181 gr. of caffeine to the above mixture.

Potassium Citrate.

Citric acid.....	av.oz. 7
Potassium bicarbonate.....	av.oz. 10
Sugar.....	av.oz. 5½

Powder the ingredients separately, and mix them thoroughly in a warm mortar. A pasty mass will be produced which may be granulated as described in the general formula.—U. S. P.

Sodium Citro-Tartrate.

Sodium bicarbonate.....	av.oz. 8½
Tartaric acid.....	av.oz. 4½
Citric acid.....	av.oz. 3
Sugar.....	av.oz. 2½

Prepare according to the general formula.—Brit. Pharm.

Sodium Phosphate.

Sodium phosphate, crystal.....	av.oz. 12½
Sodium bicarbonate.....	av.oz. 12½
Tartaric acid.....	av.oz. 6¾
Citric acid.....	av.oz. 4½

Dry the sodium phosphate until it has lost 60 per cent of its weight, then powder, add the other ingredients, and complete the process as according to the preceding formula.—Brit. Pharm.

Sodium Sulphate.

Sodium sulphate, clear crystals.....	av.oz. 12½
Sodium bicarbonate.....	av.oz. 12½
Tartaric acid.....	av.oz. 6¾
Citric acid.....	av.oz. 4½

Dry the sodium sulphate until it has lost rather more than one-half (56 per cent) of its weight, then add the other ingredients, and prepare the salt according to the preceding formula.—Brit. Pharm.

Vichy Salt, Artificial.

Artificial Vichy salt.....	av.oz. 6
Saccharated sodium bicarbonate.....	av.oz. 9½
Saccharated tartaric acid.....	av.oz. 9½

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained. If desired in the granular form, follow the general formula by substituting saccharated citric acid for one-half the saccharated tartaric acid, heating, etc.—N. F.

A solution of about 57 gr. of this preparation in 6 fluidounces of water represents an equal volume of Vichy water (Grande Grille spring) in its essential constituents.

Vichy Salt, Artificial, with Lithium.

Artificial Vichy salt.....	av.oz. 4
Lithium citrate, very fine powder.gr.	650
Saccharated sodium bicarbon-	
ate	av.oz. 10
Saccharated tartaric acid.....	av.oz. 10

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained. If desired in the granular form, follow the general formula by substituting saccharated citric acid for one-half the saccharated tartaric acid, heating, etc.—N. F.

Ninety gr. (or about a heaped teaspoonful) of this preparation represent 14 gr. of artificial Vichy salt, and 5 gr. of lithium citrate.

Salt of Lemon, Artificial.

Oxalic acid.....	av.oz. 4
Potassium carbonate	av.oz. 2
Cream of tartar.....	av.oz. 6

Salts, Mineral Water, Artificial.

See Part IV.

Salt, Sea, Artificial. (Sal Marinum.)**I.**

Sodium chloride.....	av.oz. 80
Magnesium chloride.....	av.oz. 11
Calcium chloride.....	av.oz. 2
Potassium bromide	gr. 130
Potassium iodide.....	gr. 88
Magnesium sulphate	av.oz. 6½

—D.

II.

Sodium chloride.....	av.oz. 80
Magnesium sulphate	av.oz. 16
Calcium chloride.....	av.oz. 8½
Potassium iodide.....	gr. 70
Potassium bromide.....	gr. 85

—H.

Silk, Carbolated.**I. Lister's:**

White wax	gr. 44
Carbolic acid, crystal.....	av.oz. 1
Silk thread, strong (not dyed).....	sufficient

Mix the acid and wax by fusion, place into the mixture as much of the thread as may be desired and allow it to remain until the mixture is cold. Then wipe off the excess of liquid from the thread by means of a cloth, and then preserve the medicated fiber in a mixture of:

Carbolic acid, crystal	gr. 75
Glycerin.....	fl.dr. 9½
Alcohol.....	fl.oz. 2

—D.

II. Czerny:

Boil strong or thick silk thread (uncolored) in 5 per cent carbolic acid water, for from 10 minutes to 1½ hours, according to the thickness of the thread. For at the end of every half hour of boiling the water should be renewed. The fiber should be preserved in 2 per cent carbolic acid water.—D.

Silk, Iodoform, Partsch.

Wind strong silk thread (uncolored) upon a glass spool, or other similar suitable object, and macerate for 2 days in a 10 per cent, solution of iodoform in ether. Then dry the fiber by exposing for a moment to the atmosphere, and preserve in well-closed glass bottles or jars.—D.

Silk, Sublimated.**I.**

Macerate strong uncolored silk thread for 24 hours in a 1 per cent solution of mercuric chloride in distilled water, then preserve in a solution of:

Mercuric chloride.....	gr. 1
Glycerin.....	fl.dr. 3
Alcohol.....	fl.oz. 5

—D.

II. Schede-Kuemmel:

Boil strong uncolored silk for 2 hours in a 1 per cent aqueous solution of mercuric chloride, and preserve in a one-tenth aqueous solution of the same agent.—D.

Snuff, Catarrh.

Morphine hydrochlorate.....	gr. 3
Acacia, fine powder.....	gr. 180
Bismuth subnitrate	gr. 540

Mix them intimately by trituration.—N. F.

Snuff, Cephalic.

Sage	av.oz. 1
Lavender flowers	av.oz. 1
Marjoram.....	av.oz. 1
Wild ginger.....	av.oz. 1
White hellebore.....	gr. 60

All should be in fine powder, and be well mixed.

Snuff, Menthol.

Menthol	gr. 45
Sugar of milk.....	av.oz. 1
Sugar	av.oz. ½
Coffee, roasted.....	av.oz. 1½
Boric acid.....	gr. 90

All should be in fine powder and be well mixed.—H.

Snuff, Schneeberger.

I.

White hellebore	av.oz. 2
Orris root,	
Bayberry bark	of each, av.oz. 1
Starch	av.oz. 12
Oil of cloves	drops 20

The first four ingredients should be in the finest powder and the whole should be well mixed.

II.

Rice powder	av.oz. 5
Canada snake root	av.oz. 1
White hellebore	av.oz. 3/4
Orris root	av.oz. 1 1/2
Oil of bergamot	drops 4

All should be in fine powder and should be well mixed.—H.

III.

Starch powder	av.oz. 5
Orris root	av.oz. 3
Canada snake root	av.oz. 1
White hellebore	av.oz. 1
Oleobalsamic mixture	drops 10

All should be in fine powder and should be well mixed.—H. modified.

Solution of Acid Phosphates. (Compound Solution of Phosphoric Acid.)

I.

Bone ash, fine powder	av.oz. 17 1/2
Sulphuric acid (sp. gr., 1.830)	av.oz. 13 1/4
Water	fl.oz. 64

Mix the bone ash with 16 fluidounces of water, add the sulphuric acid, diluted with 32 fluidounces of water, and mix thoroughly with a porcelain or glass stirrer. Now add the remainder of the water and set the mixture aside for 24 hours, stirring occasionally. Then transfer the mixture to a strong muslin strainer, and subject this to a gradual pressure (avoiding contact with metals), so as to express as much of the liquid as possible. Lastly, filter this through paper.—N. F.

II.

Calcium carbonate, precipitated ..	gr. 869
Calcined magnesia	gr. 116
Potassium carbonate	gr. 151
Iron phosphate	gr. 64
Phosphoric acid, 85 per cent ..	fl.oz. 3 1/2
Water, enough to make	fl.oz. 16

Mix the acid with 8 fluidounces of water, add the calcium carbonate gradually, with constant stirring; when effervescence has

ceased, add the calcined magnesia in the same way and then add the potassium carbonate; finally add the remainder of the water, allowing the liquid to stand for several days, if possible, and filtering.

Solution of Aluminium Acetate. (Burrow's Solution).

Acetate of lead	av.oz. 16
Potassa alum	av.oz. 10
Sulphate of soda	av.oz. 1
Water ..	gallon 1

Dissolve the alum and soda in half the water; the lead in the other half; mix, filter.

Solution of Aloes and Soda, Mettauer's. (Mettauer's Laxative Aperient.)

Socotrine aloes	gr. 300
Sodium bicarbonate	av.oz. 1 1/2
Compound tincture of lavender fl.dr.	6
Water	fl.oz. 16

Macerate for 2 weeks, agitating occasionally, and filter.

Solution of Aluminum Chloride.

Aluminum sulphate	av.oz. 5
Barium chloride	av.oz. 5
Distilled water	sufficient

Dissolve the aluminum salt in 8 fluidounces of hot water, and the barium salt in 10 fluidounces of hot distilled water; mix the solutions, and heat the mixture on a water bath to about 70 or 75 degs. C.; then allow to cool, filter and pass enough water through the filter to make the product weigh 20 av.ounces.—D.

Instead of using barium chloride, calcium chloride may be used. In this case, however, the mixture of the two salts should be set aside in a cold place, for at least one week, in order that the excess of sulphate of calcium, not retained in solution, may separate. And when filtering the solution, it will hardly pay to wash out the small amount retained by the precipitate. Of course, when a solution of a definite strength is required, the first-mentioned formula should be used. But when the liquid is wanted as a disinfectant, the second method may be employed.

Solution of Ammonia, Anisated.

(Liquor Ammonii Anisatus.)

Oil of anise	fl.dr. 4
Alcohol	fl.oz. 13 1/2
Ammonia water	fl.oz. 2 1/2

—Germ. and Austr. Pharm.

Solution of Ammonium Benzoate.

Ammonium carbonategr. 500
 Benzoic acid.....gr. 1165
 Distilled water, enough to
 makefl.oz. 16

Reduce the ammonium salt to powder, mix it and the acid in a capacious vessel, add the water, stir frequently until effervescence has ceased and solution is complete, and filter.

Each fluidram contains 10 gr. of ammonium benzoate.

Solution of Ammonium Valerianate.

Ammonium valerianategr. 240
 Borax, powder.....gr. 884
 Ammonia water.....sufficient
 Distilled water, enough to make fl.oz. 16

Mix the ammonium valerianate with 2 fluidounces of distilled water and add ammonia water, drop by drop, until a clear and slightly alkaline solution is produced; then add 4 fluidounces of water and the borax, stir the whole well, and when all or almost all has dissolved, add enough water to make 16 fluidounces, and filter.

This makes a tasteless and odorless preparation.

Solution of Annatto. (Extract of Annatto.)

Annattoav.oz. 4
 Potassium carbonateav.oz. 4
 Watersufficient

Boil the annatto and potassium carbonate with 16 fluidounces of water until the annatto is dissolved, then strain, and add enough water through the strainer to make the colature measure 16 fluidounces.

This preparation is employed for coloring purposes.

Solution of Antimony, Chloride.

(Butter of Antimony.)

Black sulphide of antimony,
 pureav.oz. 6¾
 Hydrochloric acidfl.oz. 32

Place the antimony compound in a porcelain or enameled-iron dish, add the acid, apply to the mixture at first a gentle heat which must be gradually increased, as the evolution of gas slackens, until the mixture boils. Continue boiling for 15 minutes, then remove the vessel from the fire, and filter the liquid through calico, returning that

which passes through at first until a perfectly clear liquid is obtained. Concentrate this by evaporation to 16 fluidounces, and preserve in a glass-stoppered bottle.—Brit. Pharm.

Owing to the fact that most of the black antimony of the market is very impure, great care should be exercised in the selection of a suitable article. This black antimony should be in fine powder. The boiling of the liquid should either be done under a good flue or in the open air, to avoid tainting the atmosphere of the room with the disagreeable odorous sulphuretted hydrogen gas.

Solution, Antiseptic, Sailer's.

Sodium bicarbonate.....gr. 240
 Boraxgr. 240
 Sodium benzoate.....gr. 10
 Sodium salicylate.....gr. 10
 Eucalyptolm. 5
 Thymol.....gr. 5
 Mentholgr. 2½
 Oil of wintergreen.....drops 3
 Glycerin.....fl.oz. 4¼
 Alcohol.....fl.oz. 1
 Distilled water, sufficient to
 makepints 8

Dissolve the salt in 64 fluidounces of water by the aid of heat, also the eucalyptol, thymol, menthol, and oil in the alcohol, mix the two solutions, add the glycerin and the remainder of the water, allow to stand for 24 hours, and filter.

Solution, Antiseptic, Lister's. (Lister's Antiseptic Fluid.)

I.
 Benzoic acid.....gr. 64
 Boraxgr. 64
 Boric acid.....gr. 128
 Thymol.....gr. 20
 Oil of eucalyptus.....drops 5
 Oil of wintergreendrops 5
 Oil of peppermint.....drops 3
 Oil of thyme (white).....drop 1
 Fluid extract of wild indigo ..drops 20
 Alcoholfl.oz. 6
 Distilled water.....sufficient

Dissolve the two acids and borax by the aid of heat in 8 fluidounces of water, also dissolve the thymol and oils in the alcohol, mix the two solutions, agitating frequently during mixing, add the fluid extract, and then enough water to make 16 fluidounces; set aside for 24 hours, and filter through purified talcum.

II.

Boric acid.....	gr. 128
Thymol.....	gr. 20
Eucalyptol.....	drops 5
Oil of wintergreen.....	drops 5
Oil of peppermint.....	drops 3
Oil of thyme, white.....	drop 1
Fluid extract of wild indigo.....	m. 30
Alcohol.....	fl.oz. 3
Distilled water, sufficient to make.....	fl.oz. 16

Dissolve the acid in some of the water, add the other ingredients to the alcohol, dissolve, mix the two solutions, add the remainder of the water, let stand for 24 hours, and filter through purified talcum.

III.

Boric acid.....	gr. 128
Thymol.....	gr. 16
Menthol.....	gr. 16
Oil of eucalyptus.....	drops 4
Oil of wintergreen.....	drops 4
Oil of horsemint.....	drops 4
Water.....	fl.oz. 12
Alcohol.....	fl.oz. 4
Caramel.....	drops 1 or 2

Dissolve the boric acid in the water and the other ingredients in the alcohol and mix the solutions; let stand for a day or two, shaking frequently, and filter.

Solution of Borax Comp. (Dobell's.)

Borate and bicarb. of soda, each.....	gr. 120
Carbolic acid cryst.....	gr. 24
Glycerin.....	fl.oz. 1/2
Add water, fl.-oz. 16 and mix.	

Solution of Bromine.

Bromine.....	gr. 70
Potassium bromide.....	gr. 140
Water.....	fl.oz. 16

In order to avoid inhaling the intensely acrid bromine vapor, the potassium bromide should be dissolved in a small portion of the water and this solution contained in a bottle be balanced on the "scales," and then the bromine may be dropped into the solution from a medicine dropper; the balance of the water should then be added.

This solution must not be confounded with the N. F. preparation, which is very much stronger. The latter is prepared as follows:

Bromine.....	gr. 480
Potassium bromide.....	gr. 240
Water.....	fl.oz. 4

Dissolve the potassium bromide in the

water contained in a bottle, add the bromine, and shake the mixture until this is dissolved. Keep the solution in glass-stoppered vials in a dark place.

Solution of Calcium Chloride, Badermacher's.

Calcium chloride.....	av.oz. 5 1/2
Water.....	fl.oz. 10

Solution of Coal Tar. (Liquor Carbonis Detergens.—Liquor Picis Carbonis.)

I.

Coal tar.....	av.oz. 4
Tincture of quillaja, N. F.....	fl.oz. 8
Alcohol.....	fl.oz. 8

Digest for 2 days, decant the clear liquid and filter.

II.

Quillaja bark, coarse powder.....	gr. 450
Alcohol.....	sufficient
Prepared coal tar.....	av.oz. 2

Extract the quillaja by percolation with the alcohol so as to obtain 10 fluidounces of product; to this add the tar, digest at a temperature of about 50 degs. C. for 2 days, allow to become cold, and decant the clear liquid or filter.—Brit. Pharm.

Prepared coal tar is made by placing commercial tar in a shallow vessel, and heating to a temperature of 50 degs. C. for 1 hour, stirring frequently.—Brit. Form.

Solution of Cocaine Hydrochlorate.

Cocaine hydrochlorate.....	gr. 66
Salicylic acid.....	gr. 1
Distilled water, enough to make.....	fl.dr. 12

Boil the water, add the acid, then the cocaine, cool, and add enough water to produce the requisite volume.—Brit. Pharm.

This solution is intended to contain approximately 10 per cent of cocaine hydrochlorate.

Solution of Gold and Arsenic Bromides.

Arsenous acid.....	gr. 19
Tribromide of gold.....	gr. 24
Bromine water,	
Distilled water.....	of each, sufficient

Introduce the arsenous acid and about 18 fluidrams of bromine water into a flask and heat gently until all free bromine has disappeared. Then add bromine water, 20 to 30 drops at a time, until it will be present in

slight excess, or until the solution does not become colorless after some time. Transfer the solution to a porcelain capsule, expel the excess of bromine with the aid of gentle heat, dilute it with water to about 14 fluidounces, and dissolve in this the tribromide of gold, adding enough water to make 16 fluidounces.

Ten minims of this solution contain 1-32 grain of gold tribromide and the equivalent of 1-16 grain of arsenic tribromide.—N. F.

Solution of Gutta Percha.

(Traumaticin.)

Gutta percha.....av.oz. 1
Chloroform.....fl.oz. 6½
Lead carbonate, fine powder...av.oz. 1

Add the gutta percha to 5 fluidounces of chloroform contained in a closed bottle, and shake occasionally until solution has taken place. Then add the lead carbonate previously mixed with the remainder of the chloroform, and, having several times shaken the whole together at intervals of one-half hour, set the mixture aside until the insoluble matters have subsided and the solution has become perfectly clear. Lastly, decant the clear liquid and preserve in small, cork-stoppered bottles.—U. S. P. 1880 and N. F.

Purified gutta percha only should be employed in making this preparation.

Solution of Hydrastis, Colorless.

(Glycerite of Hydrastine.)

I.

Hydrastine hydrochlorate.....gr. 25
Aluminum chloride.....gr. 23
Calcium chloride.....gr. 20
Magnesium chloride.....gr. 18
Potassium chloride.....gr. ½
Diluted hydrochloric acid.....m. 10
Distilled water.....fl.oz. 6
Glycerin, enough to make....fl.oz. 16

Dissolve the salts in the water, add the acid, then the glycerin, and filter.

II.

Hydrastis, fine powder.....av.oz. 17½
Glycerin.....fl.oz. 8
Ether.....sufficient
Diluted sulphuric acid.....fl.dr. 1
Distilled water.....fl.oz. 8

Exhaust the hydrastis with ether, recover the ether by distillation, to the residue add the water previously mixed with the acid, let stand 7 days, agitating frequently, decant

the aqueous solution, and mix it with the glycerin.

Solution of Hypophosphites, Acid.

Calcium hypophosphite.....gr. 884
Sodium hypophosphite.....gr. 128
Potassium hypophosphite.....gr. 64
Iron phosphate, soluble.....gr. 64
Hypophosphorous acid, diluted fl.oz. 8
Water, enough to make.....fl.oz. 16

Triturate the hypophosphites to fine powder and dissolve in 12 fluidounces of water; dissolve the iron salt in 1 fluidounce of hot water and add to previous solution; then add the acid, and after standing 24 hours, filter, adding enough water through the filter to make 16 fluidounces of product.

Solution of Iodine, Caustic, Churchill's.

Iodine.....gr. 1825
Potassium iodide.....av.oz. 8¼
Water.....fl.oz. 16

Mix and dissolve.—N. F.

Solution of Iodine, Caustic, Lugol's.

Iodine.....gr. 480
Potassium iodide.....gr. 480
Water.....fl.oz. 2

Dissolve the potassium iodide in the water and add the iodine.

This is for application as a caustic.

Solution of Iodine, Compound or Lugol's.

Iodine.....gr. 360
Potassium iodide.....gr. 720
Distilled water, enough to
make.....fl.oz. 16

Mix and dissolve. Keep the solution in glass-stoppered bottles.—U. S. P.

Solution of Iodine, Magendie's.

Iodine.....gr. 2
Potassium iodide.....gr. 240
Peppermint water.....fl.oz. 6

Dissolve the potassium iodide in the water and add the iodine.

Solution of Iodine, Eubefacient, Lugol's.

Iodine.....gr. 240
Potassium iodide.....gr. 480
Water.....fl.oz. 6

Dissolve the potassium iodide in the water and add the iodine.

This is for external use.

Solution of Iron and Ammonium Citrate.

Iron citrate, soluble.....av.oz. 8
Distilled water, enough to make. fl.oz. 16
Dissolve and filter.

Solution of Iron and Quinine Citrate.

Citrate of iron and quinine,
soluble.....av.oz. 8
Distilled water, enough to make fl.oz. 16
Dissolve and filter.

Solution of Dialyzed Iron.

Solution of iron chloride, U.
S. P.fl.oz. $3\frac{1}{4}$
Ammonia water,
Distilled waterof each, sufficient

Mix 8 fluidounces of the iron chloride solution with 20 fluidounces of water and stir into the mixture sufficient ammonia water to impart a distinct ammoniacal odor. Collect the precipitate on calico or muslin, wash it with distilled water and squeeze the strainer to remove superfluous water. Add the precipitate to the remainder of the solution of iron chloride, stir thoroughly, warm gently, and when complete, or nearly complete, solution is effected, filter if necessary, place the liquid in a dialyzer, and dialyze in the usual manner until the liquid on the dialyzer is almost tasteless. Then add to this liquid enough water to make it measure 14 fluidounces.—Brit. Pharm.

Most of the so-called "dialyzed iron" of the market is not prepared by dialysis, but is made by a process the same or very similar to the one given under "solution of iron oxychloride."

Solution of Iron Oxychloride.

Solution of iron chloride, U. S.
Pm. 310
Water of ammonia.....fl.dr. $9\frac{3}{4}$
Hydrochloric acid, C. P.....m. 42
Distilled watersufficient

Mix the iron chloride solution with $5\frac{1}{2}$ fluidounces of water, and the ammonia water with $10\frac{1}{2}$ fluidounces of water, add the iron solution gradually, with constant stirring, to the ammoniacal liquid, wash the precipitate thoroughly with water, collect it, press somewhat to remove excess of water, add it to the hydrochloric acid contained in a suitable vessel (a bottle), agitate frequently during 3 days, then warm until complete solution

has taken place, and then add enough water to reduce the solution to a specific gravity of 1.050.—Germ. Pharm.

Solution of Iron Phosphate.

Iron phosphate, solubleav.oz. 8
Distilled water, enough to make fl.oz. 16

Solution of Iron "Protoxide." (Solution of Iron Protocitrate.—Solution of Ferrous Citrate.)

Ferrous sulphate, pureav.oz. $3\frac{1}{4}$
Sodium carbonate, pureav.oz. $3\frac{1}{2}$
Citric acid.....av.oz. 2
Distilled water,
Simple syrupof each, sufficient

Dissolve the two salts separately in 32 fluidounces of water, mix by adding the iron solution to the sodium solution with constant stirring, collecting the precipitate, washing it quickly with more water, until the washings are tasteless, then dissolve by the aid of a gentle heat in 4 fluidounces of water containing the citric acid and add enough simple syrup to make 16 fluidounces.

Solution of Iron Pyrophosphate.

Iron pyrophosphate, soluble .av.oz. 8
Distilled water, enough to make fl.oz. 16.

Solution of Iron Salicylate.

Ferrous sulphate, pure.....gr. 103
Sodium salicylate.....gr. 240
Sodium acetate.....av.oz. $3\frac{1}{4}$
Distilled water.....fl.oz. 8
Mix and dissolve.

Solution of Magnesium Borocitrate.

Magnesium carbonate, powder..gr. 230
Citric acid.....gr. 460
Borax, powder.....gr. 460
Water, enough to makefl.oz. 16

Dissolve the citric acid in 15 fluidrams of water at a boiling temperature, then add the magnesium carbonate and afterward the borax; filter, and then add the remainder of the water.

The solution contains about 10 gr. of the dry magnesium borocitrate in each fluidounce.

Solution of Magnesium Citrate.

I.
Magnesium carbonategr. 225
Citric acid.....gr. 450
Syrup of citric acid.....fl.oz. 2
Potassium bicarbonate.....gr. 88
Distilled watersufficient
Dissolve the acid in 4 fluidounces of water,

add the magnesium carbonate, and stir until dissolved. Filter the solution, add the syrup and enough water to make 12 fluidounces, introduce the whole at once into a bottle, add the bicarbonate, and at once cork the bottle and tie it over securely with a stout twine.

II.

Citric acid.....	gr. 860
Magnesia, calcined.....	gr. 105
Syrup of citric acid.....	fl.oz. 1
Potassium bicarbonate, crystal.....	gr. 40
Distilled water, enough to make.....	fl.oz. 12

Mix the acid, magnesia and 4 fluidounces of water, stir or agitate until dissolved, add the syrup and the remainder of the water, filter, introduce the clear filtrate into a suitable bottle, add the potassium salt, and cork and tie over the bottle immediately.

The above is intended for 1 bottle.

Solution of Mercury Albuminate.

Egg albumen, fresh.....	gr. 900
Mercuric chloride, pure.....	gr. 60
Sodium chloride.....	gr. 240
Distilled water.....	fl.oz. 10

Beat the egg albumen to foam, allow this to become liquid again by standing, and then add to it a solution of the two salts in the water. Set the liquid aside for 2 days in a cool and dark place, and filter.

This preparation must be kept in the dark.—Germ. Form.

Solution of Mercury and Arsenic Iodides. (Donovan's Solution.)

I.

Arsenious acid, C. P.....	gr. 16
Mercury.....	gr. 82
Iodine.....	gr. 102
Alcohol.....	fl.oz. 1
Distilled water.....	sufficient

Triturate the arsenic, mercury, iodine, and alcohol together until a dry mass is obtained; then triturate with this mixture 14½ fluidounces of water gradually added, transfer to a flask, heat to boiling, allow to cool, and filter, adding through the filter enough distilled water to make 16 fluidounces of filtrate.

This formula may be used by pharmacists who do not desire to carry a quantity of arsenic iodide in stock.

It is to be observed that under no consideration should the ordinary commercial im-

pure powdered arsenious acid, so-called "arsenic," be used.

Solution of Mercury Chloride.

Mercury chloride.....	gr. 2
Ammonium chloride.....	gr. 2
Distilled water.....	fl.oz. 4

Dissolve and filter.—Brit. Pharm.

Solution of Mercury and Potassium Tartrate. (Liqueur de Pressavin.)

Mercury oxide, freshly precipitated.....	gr. 175
Potassium bitartrate.....	gr. 175
Distilled water, hot.....	fl.oz. 16

Mix, dissolve and filter.

In using, mix 1 fluidounce of this with 32 fluidounces of water, and give a wineglassful 3 or 4 times daily.

Solution of Morphine.

I. Magendie's Solution:

Morphine sulphate.....	gr. 16
Distilled water, warm.....	fl.oz. 1

Dissolve the morphine sulphate in the water, and filter the solution through a small pellet of absorbent cotton. When the solution is cold, pass a little distilled water through the cotton, if necessary, to make the filtrate measure 1 fluidounce. Keep the solution in well-stoppered vials, in a dark place.—N. F.

II.

Morphine sulphate.....	gr. 1
Distilled water.....	fl.oz. 1

—U. S. P. 1870.

Solution of Morphine Acetate.

Morphine acetate.....	gr. 9
Acetic acid, diluted.....	m. 18
Alcohol.....	fl.dr. 4
Distilled water.....	fl.dr. 12

—Brit. Pharm.

Solution of Morphine Citrate.

Morphine (alkaloid).....	gr. 16
Citric acid.....	gr. 14
Cochineal.....	gr. ½
Alcohol.....	fl.dr. 1½
Distilled water, enough to make.....	fl.oz. 1

Triturate the solids with the alcohol and 10 fluidrams of water; filter and pass the remainder of the distilled water through the filter.

This solution should not be kept on hand, but prepared only when required.

Each fluidram contains 2 gr. of morphine in the form of citrate.—N. F.

Solution of Morphine Bimeconate.

Morphine (alkaloid).....gr. 18½
Meconic acid.....gr. 12
Alcohol.....fl.oz. 1
Distilled water, enough to make fl.oz. 4

Add the morphine and acid to the alcohol, then add the water, dissolve by agitation, and filter through white paper.—Brit. Pharm. modified.

Solution of Morphine Hydrochlorate.

I.

Morphine hydrochlorate.....gr. 19
Distilled water.....fl.oz. 1
—Codex.

II.

Morphine hydrochlorate.....gr. 9
Hydrochloric acid, diluted.....m. 18
Alcohol.....fl.dr. 4
Distilled water.....fl.dr. 12
—Brit. Pharm.

Solution of Potassa. (Liquor Potassa.)

Potassium hydrate.....av.oz. 1
Distilled water.....fl.oz. 16
Mix and dissolve.—U. S. P.

Solution of Potassium Acetate.

Acetic acid.....fl.oz. 10¾
Potassium bicarbonate,
Water.....of each, sufficient

To the acid add 2¼ fluidounces of water, add gradually 6½ av. ounces of potassium bicarbonate, heat the liquid to boiling, then neutralize by the further addition of the potassium salt, and then add enough water to make 16 fluidounces.—Germ. Pharm.

Solution of Potassium Permanganate.

I.

Potassium permanganate.....gr. 128
Distilled water.....fl.oz. 16

Mix and dissolve. Preserve the solution in a glass or rubber-stoppered bottle.

II.

Potassium permanganate.....gr. 77
Distilled water.....fl.oz. 16
—Brit. Pharm.

Solution of Rennet. (Liquor Seriparus.

—Liquid Rennet.—Rennet Wine.—
Essence of Rennet.)

I.

Calves' rennet, fresh.....av.oz. 1¾
Sodium chloride.....gr. 320
Alcohol.....fl.oz. 3¼
Water.....fl.oz. 18

Dissolve the sodium chloride in the water,

add the alcohol, and macerate in this mixture the rennet (or the washed mucous membrane of the fresh stomach of a suckling calf), during 3 days, under frequent agitation; then filter.—N. F.

II.

Rennet, fresh.....No. 1
Salt.....gr. 480
Water.....fl.oz. 8
Diluted alcohol.....fl.oz. 8
Sherry wine.....fl.oz. 16

Cut the rennet, knead together with the salt, and set aside for a day, then add the water and diluted alcohol, let macerate for several weeks, add the sherry wine and filter.

Solution of Saccharin.

Saccharin.....gr. 512
Bicarbonate of sodium.....gr. 240
Alcohol.....fl.oz. 4
Water, sufficient to make.....fl.oz. 16

Mix and dissolve. Each fluidram represents 4 grains of saccharin.

Solution of Strychnine Acetate. (Hall's

Solution of Strychnine.)

Acetate of strychnine.....gr. 1
Diluted acetic acid.....drops 15
Alcohol.....fl.dr. 2
Comp. tincture of cardamom.....drops 5
Water, sufficient to make.....fl.oz. 1
Each fl. dr. has ⅓ gr. acetate strychnine.

Solution, Turpentine, Anodyne,

Rademacher's.

Spirit of ether.....fl.oz. 15
Oil of turpentine.....fl.dr. 8½

Species, Alterative. (Swedish Blood-

Purifying Tea.—Compound Species of
Guaiac.—Species ad Infusum Lignorum.)

Licorice root, cut.....av.oz. 1½
Saponaria, cut.....av.oz. 3½
Juniper root, cut.....av.oz. 6
Guaiacum wood, rasped.....av.oz. 9

—Swed. Pharm.

Species, Aromatic. (Aromatic Tea.—

Species Resolventes.)

Peppermint, cut fine.....av.oz. 2
Wild thyme, cut fine.....av.oz. 2
Garden thyme, cut fine.....av.oz. 2
Lavender flower.....av.oz. 2
Cloves, cut fine.....av.oz. 2
Cubebs, coarse powder.....av.oz. 1

—Germ. Pharm.

Species, Bitter. (Bitter Tea.)

I.

Wormwood, cut.....	av.oz. 2
European centaury, cut.....	av.oz. 2
Bitter orange peel, cut.....	av.oz. 2
Buckbean, cut.....	av.oz. 1
Calamus, cut.....	av.oz. 1
Gentian, cut.....	av.oz. 1
Cassia bark, cut.....	gr. 130

Austr. Pharm

II.

The following is also known by the names
Species Quassia Amaræ and Boecker's Bitter
Tonic Tea:

Star anise, crushed.....	av.oz. 2
Quassia, rasped.....	av.oz. 4
Blessed thistle, cut.....	av.oz. 4

—Swed. Pharm

Species, Carminative.

Anise.....	av.oz. 2
Fennel.....	av.oz. 2
Coriander.....	av.oz. 2
Caraway.....	av.oz. 2

—Codex.

Species, Diuretic. (Diuretic Tea.)

I.

Lovage root, cut.....	av.oz. 4
Restharrow root, cut.....	av.oz. 4
Licorice root, cut.....	av.oz. 4
Juniper berries, crushed.....	av.oz. 4

—Germ. Pharm.

II. An older formula is this:

Licorice root, cut.....	av.oz. 4
Lovage root, cut.....	av.oz. 8
Rest harrow root, cut.....	av.oz. 8
Pansy herb, cut.....	av.oz. 8
Juniper berries, crushed.....	av.oz. 8
Parsley seed.....	av.oz. 2
Anise seed.....	av.oz. 2

D.

Species, Gargle. (Species ad Gargarisma.)

Elder flowers.....	av.oz. 4
Mallow flowers, cut.....	av.oz. 4
Marshmallow herb, cut.....	av.oz. 4

H.

Species, Laxative. (St. Germain Tea.)

Senna, cut.....	av.oz. 8
Elder flowers.....	av.oz. 5
Fennel, bruised.....	av.oz. 2½
Anise, bruised.....	av.oz. 2½
Potassium bitartrate, fine powder.....	av.oz. 2

Moisten the senna with a small quantity of
water; then sprinkle over it, as uniformly as
possible, the potassium bitartrate. When it
has become dry, mix it lightly and uniformly
with the other ingredients.—N. F.

Species, Long Life. (Species ad Longam
Vitam.)

Aloes.....	av.oz. 6
Rhubarb.....	av.oz. 1
Gentian.....	av.oz. 1
Zedoary.....	av.oz. 1
Galangal.....	av.oz. 1
Myrrh.....	av.oz. 1
Agaric.....	av.oz. 2
Theriac.....	av.oz. 1

Reduce the first seven ingredients to small
pieces, then rub the agaric to coarse powder,
triturate the theriac with it and mix the
whole.—D.

Species, Marshmallow. (Marshmallow
Tea.—Species Althæa.)

Marshmallow root, cut.....	av.oz. 10
Marshmallow leaves, cut.....	av.oz. 5
Licorice root, cut.....	av.oz. 2½
Mallow flowers (Malva sylvestris), cut.....	av.oz. 1

—Austr. Pharm.

Species, Pectoral. (Breast Tea.)

Althæa, peeled.....	av.oz. 8
Coltsfoot leaves.....	av.oz. 4
Licorice root, Russian, peeled.....	av.oz. 8
Anise.....	av.oz. 2
Mullein flowers.....	av.oz. 2
Orris root.....	av.oz. 2

Cut, bruise and mix them.—N. F.

Species, Saxon. (Saxon Tea.—Species
Laxantes Schrammii.)

Senna, cut.....	av.oz. 6
Anise, bruised.....	av.oz. 2
Fennel, bruised.....	av.oz. 2
Red saunders, rasped.....	av.oz. 2

Species, Wood. (Species Lignorum.—
Wood Tea.—Blood-Purifying Tea.)

Guaiac wood.....	av.oz. 5
Rest harrow, cut.....	av.oz. 3
Licorice root.....	av.oz. 1
Sassafras wood, cut.....	av.oz. 1

—Germ. Pharm

Spirit of Angelica, Compound.

I.

Angelica root, cut.....	av.oz. 2¼
Valerian, cut.....	gr. 270
Juniper berries, bruised.....	gr. 270
Alcohol.....	fl.oz. 18
Water.....	fl.oz. 18
Camphor.....	gr. 120

Macerate the roots and berries in the alco-
hol and water for 24 hours, then distill off 16
fluidounces, and dissolve the camphor in the
distillate.—Germ. Pharm.

II.

Oil of angelica root	.....drops	12
Oil of valerian	.....drops	4
Oil of juniper berries	.....drops	4
Camphor	.....gr.	120
Alcohol, enough to make	.....fl.oz.	16

—H.

Spirit of Almond, Bitter.

Oil of bitter almond	.....m.	80
Alcohol	.....fl.oz.	12½
Distilled water	.....sufficient	

Dissolve the oil in the alcohol and add enough water to make 16 fluidounces.—U. S. P.

Spirit of Ammonia, Succinic.

Oleobalsamic mixture	.....fl.oz.	3
Alcohol	.....fl.oz.	3
Ammonia water	.....fl.oz.	4
Amber oil, rectified	.....drops	10

—D.

Spirit of Cardamom, Compound.

Oil of cardamom	.....drops	12
Oil of caraway	.....drops	2
Oil of cassia	.....drops	1
Alcohol	.....fl.oz.	4
Glycerin	.....fl.dr.	4
Water, enough to make	.....fl.oz.	8

Dissolve the oils in the alcohol, add the glycerin, and then the water.—N. F.

Spirit of Cinnamon.

Oil of cinnamon	.....fl.dr.	13
Alcohol, enough to make	.....fl.oz.	16

—U. S. P.

Spirit of Cloves.

Oil of cloves	.....fl.dr.	12½
Alcohol, enough to make	.....fl.oz.	16

Spirit of Ether, Camphorated. (Nerve Drops.)

Camphor	.....av.oz.	1¼
Alcohol	.....fl.oz.	10¾
Ether	.....fl.oz.	4

Swed. Pharm.

Spirit of Formic Acid. (Spiritus Formicarum.—Spirit of Ants.)

Formic acid	.....fl.dr.	2¼
Distilled water	.....fl.oz.	3½
Alcohol, enough to make	.....fl.oz.	16

Mix the formic acid with the distilled water, and add the alcohol.

Formic acid for this preparation should have a specific gravity of 1.060 to 1.063.—N. F.

Spirit of Formic Acid, Compound.

Oil of lavender flowers	.....m.	80
Oil of turpentine	.....m.	80
Spirit of formic acid, enough to make	.....fl.oz.	16

—D.

Spirit of Horse-Radish, Compound.

Horseradish root, fresh, scraped	av.oz.	2
Bitter orange peel, cut small and bruised	av.oz.	2
Nutmeg, bruised	gr.	22
Alcohol	fl.oz.	8
Water	fl.oz.	14

Mix and distill 16 fluidounces.—Brit. Pharm.

Spirit of Lavender.

Oil of lavender flowers	.....fl.dr.	6½
Deodorized alcohol, enough to make	.....fl.oz.	16

—U. S. P.

Spirit of Lemon.

Oil of lemon	.....fl.dr.	6½
Lemon peel, freshly grated	gr.	390
Deodorized alcohol	.....sufficient	

Dissolve the oil in 14 fluidounces of alcohol, add the peel, macerate for 24 hours, filter, and through the filter add enough diluted alcohol to make 16 fluidounces.—U. S. P.

Spirit of Melissa. (Spirit of Balm.)

This may be prepared by distilling 4 av. ounces of melissa herb with 14 fluidounces of alcohol and 20 of water, so as to obtain 16 fluidounces of product.—D. modified.

It may also be prepared by dissolving 24 drops of oil of melissa in 12 fluidounces of alcohol and adding 4 fluidounces of water.

Spirit of Melissa, Compound. (Carmelite Spirit.—Aromatic Spirit.—Karmelite Geist.)

I.

Melissa herb	.....gr.	450
Lemon peel	.....gr.	884
Nutmeg	.....gr.	192
Ceylon cinnamon	.....gr.	96
Cloves	.....gr.	96
Alcohol	.....fl.oz.	13
Water	.....fl.oz.	18

Mix all and distill off 16 fluidounces.—Germ. Pharm.

II.

A quicker and more convenient process is this:

Oil of melissa	drops 18
Oil of lemon	drops 18
Oil of nutmeg	drops 12
Oil of cloves	drops 12
Oil of Ceylon cinnamon	drops 12
Alcohol, enough to make	f. oz. 16

—H.

Spirit of Mastic Compound. (Spiritus Matriculis.—Mutter Spiritus.)

Mastic	av. oz. 1
Olibanum	av. oz. 1
Myrrh	av. oz. 1
Alcohol	f. oz. 16
Water	f. oz. 8

Digest the gums with the alcohol, add the water and distill one pint.

Spirit of Rosemary.

Oil of rosemary	f. dr. 2½
Alcohol, enough to make	f. oz. 16

—Brit. Pharm.

Spirit of Rosemary, Compound. (Aqua Hungarica.)

Spirit of rosemary	f. oz. 9½
Spirit of lavender flowers	f. oz. 3¼
Spirit of sage	f. oz. 3¼

The spirits may be made from the respective oils and alcohol so as to contain 10 per cent of the former.—D. and H.

Spirit of Soap.

Castile soap, shaving	av. oz. 2¾
Alcohol	f. oz. 9½
Water, enough to make	f. oz. 16

Introduce the soap into a bottle, add the alcohol and 8½ fluidounces of water, cork the bottle, and immerse in hot water, frequently shaking. When the soap is dissolved, allow the bottle and contents to become cold, add the remainder of the water and filter.—N F.

Spirit of Soap, Camphorated. (Liquid Opodeldoc.)

Spirit of camphor	f. oz. 4
Spirit of soap	f. oz. 11
Ammonia water	f. dr. 6
Oil of thyme, white	f. dr. ½
Oil of rosemary	f. dr. 1

Mix and filter.—Germ. Pharm.

Spirit of Thyme.

Oil of thyme, white	m. 45
Alcohol	f. oz. 12
Water	f. oz. 4

Mix and filter.—D.

Sponge, Burnt, Artificial.

Sodium chloride	av. oz. ½
Ferric oxide	av. oz. 1
Potassium iodide	av. oz. 1
Prepared oyster shell	av. oz. 8
Wood charcoal	av. oz. 4

Mix and reduce to fine powder.—H.

Prepared oyster shell is made by thoroughly cleaning the shell, then reducing in a mortar, separating the finer particles by elutriation and drying the latter.

Sponge, Carbolized.

Carbolic acid, crystal	gr. 450
Alcohol	f. oz. 4
Water	f. oz. 18

Bleached sponges are allowed to remain in this solution for 24 hours, when an equal volume of water is added. The sponges are to remain in the fluid.—D.

Starch, Iodized.

Starch	gr. 475
Iodine	gr. 25
Water	sufficient

Triturate the iodine with a little distilled water, add the starch gradually and continue trituration until a uniform blue-black product is obtained. Dry this at a temperature not exceeding 40 degrees C., rub to fine powder, and preserve in well-stoppered bottles.—U. S. P. 1880 and N. F.

Stone, Medicinal. (Lapis Medicamentosus.—Lapis Mirabilis.)

Alum	av. oz. 8
Litharge	av. oz. 8
Armenian bole	av. oz. 8
Sulphate of iron, dried	av. oz. 1½
Diluted acetic acid	av. oz. 2

Mix and evaporate to dryness.

Suet. (Tallow.)

Mutton suet is official in the United States pharmacopœia, but beef suet is also used. Either may be prepared by taking the fat from the vicinity of the kidneys of the sheep or cow, cutting into small pieces, heating on

a water bath until the fat is quite melted and then straining with expression through flannel. Dieterich recommends adding to the fatty matter in the dish 1-20 its weight of dried sodium sulphate in fine powder, continuing the heat for 15 minutes after thorough fusion has occurred, stirring frequently and filtering by hot filtration. The sodium sulphate removes moisture and assists in separating the membranes.

Beef suet has a slightly lower fusing point than mutton suet, otherwise the two are practically alike, so that one or the other may be selected, depending upon the use the product is to serve.

Suet, Benzoated.

Mutton suet.....	av.oz. 10
Benzoin, coarse powder.....	av.oz. 1
Sodium sulphate, dried.....	av.oz. 1

Heat the three ingredients together on a water bath for one hour, stirring frequently, then strain through flannel or filter. The suet to be used should be such as has not already been treated with the dried sodium sulphate.—D.

Suet, Deer.

Beef tallow is usually dispensed for this. It is generally sold either in the form of flat cake or of cylinders about 1 inch in diameter.

Suet, Salicylated.

Salicylic acid.....	gr. 70
Mutton suet.....	av.lb. 8

Melt the suet on a water bath, add the acid, and dissolve by stirring.—Germ. Pharm.

Sugar, Coumarin. (Elæosaccharum Coumarini.)

Coumarin.....	gr. 3½
Sugar, fine powder.....	av.oz. 8

Mix well and keep in well-closed bottles.—D.

Sugar, Vanilla. (Elæosaccharum Vanillæ.)

Vanilla.....	av.oz. 1
Alcohol.....	fl.oz. 1
Sugar of milk, crystal.....	av.oz. 2
Sugar, crystal (i. e. rock candy).....	av.oz. 7
Sugar, fine powder, enough to make.....	av.oz. 10

Cut the vanilla into very small pieces by means of a shears or sharp knife, add the alcohol, macerate for 30 minutes, add the milk sugar, contuse until tolerably well reduced, add one-half of the rock candy, contuse and triturate until a tolerably fine powder is produced, sift through a No. 50 sieve, return the residue to the mortar, add the remainder of the rock candy, contuse, triturate, and sift as before, return the coarser particles to the mortar, and continue the trituration and sifting until nearly all has passed through the sieve; finally add the powdered sugar, mix well, and preserve in well-stoppered bottles.

For general sale the above should be mixed with nine times its weight of powdered sugar.—D.

Sugar, Vanillin. (Elæosaccharum Vanillini.)

Vanillin.....	gr. 75
Sugar, powdered.....	av.oz. 8

Mix well and preserve in well-stoppered bottles.—Codex.

This has about the same relative strength as vanilla sugar and may be employed in place of the latter.

Flavored sugars made with volatile oils should be prepared by intimately mixing 1 drop of oil with 30 grains of powdered sugar.—N. F.

They are properly known as oil-sugars or oleosaccharates (Latin: elæosacchara).

Syrup of Ammonium Chloride.

Ammonium chloride.....	av.oz. 2¼
Sugar.....	av.oz. 11
Water, enough to make.....	fl.oz. 16

Dissolve the ammonium salt in 10 fluid-ounces of water, add the sugar and the remainder of the water, dissolve by agitation and strain if necessary.

Syrup of Apomorphine Hydrochlorate.

Apomorphine hydrochlorate.....	gr. 4
Hydrochloric acid, dilute.....	fl.dr. 1½
Alcohol.....	fl.dr. 5½
Distilled water.....	fl.dr. 5½
Simple syrup.....	fl.oz. 14½

Mix the alcohol and water, add the apomorphine to it, dissolve by agitation, add the acid and the syrup.—Brit. Form.

Syrup of Aralia, Compound. (Compound Syrup of Spikenard.—Alterative Syrup.)

Spikenard root.....	gr. 300
Burdock	gr. 800
Yellow dock.....	gr. 800
Guaiacum wood.....	gr. 300
Sassafras bark	gr. 240
Prickly ash bark	gr. 240
Elder flowers.....	gr. 240
Blue flag root.....	gr. 240
Glycerin,	
Diluted alcohol.....	of each, sufficient
Sugar	av.oz. 10

Mix the drugs and reduce to a coarse powder, extract in the usual way by percolation, with diluted alcohol; obtain 10 fluidounces of percolate in which dissolve the sugar by percolation and to this last percolate add, if necessary, enough glycerin to make 16 fluidounces.—Eclectic.

Syrup of Asafetida.

Asafetida, select gum.....	grs. 240
Boiling water	fl.oz. 8
Sugar	av.oz. 18½

Rub the gum with a portion of the water to a smooth paste, add the remainder of the water and sugar, dissolve by aid of gentle heat and strain.—Eclectic.

Syrup of Bayberry, Thompsonian.

Bayberry bark.....	av.oz. 8
Diluted alcohol.....	fl.oz. 32
Sugar	av.oz. 8

Macerate the bark with the diluted alcohol in a warm place for two days, strain, evaporate the colature to 8 fluidounces and in this dissolve the sugar.

Syrup of Belladonna, Compound.

Fluid extract of belladonna root.....	fl.dr. 2
Fluid extract of chestnut leaves.....	fl.dr. 4
Syrup of wild cherry bark, enough	
to make.....	fl.oz. 16

This is an effective mixture for whooping cough.

Syrup of Blackberry, Aromatic.

Blackberry root bark.....	av.oz. 2¼
Cinnamon.....	gr. 120
Nutmeg	gr. 120
Cloves	gr. 60
Allspice	gr. 60
Sugar	av.oz. 11
Diluted alcohol,	
Blackberry juice.....	of each, sufficient

Reduce the drug to moderately coarse powder, and percolate in the usual manner with diluted alcohol until 4 fluidounces of percolate are obtained. To this add 7 fluidounces of the juice and the sugar, dissolve by agitation, and strain.—N. F.

Syrup of Buckthorn Bark. (Syrup of Frangula.)

Fluid extract of frangula.....	fl.dr. 10
Simple syrup, enough to make.....	fl.oz. 16
—D.	

Syrup of Buckthorn Berries.

(Syrupus Spinæ Cervinæ.)

Sugar	av.oz. 14½
Fermented juice of buckthorn	
berries	sufficient

Dissolve the sugar in 7 fluidounces of the juice, with the aid of a gentle heat, allow the syrup to cool, then add enough of the juice to make 16 fluidounces and strain if necessary.—N. F.

Syrup of Butyl Chloral.

See Syrup of Croton Chloral.

Syrup of Calcium Hypophosphite.**Syrup of Calcium and Sodium Hypophosphite.**

See Syrups of the Hypophosphites.

Syrup of Calcium Phosphate.**I. Wiegand's:**

Calcium phosphate, precipi-	
tated.....	av.oz. 1¼
Hydrochloric acid.....	fl.dr. 4½
Sugar	av.oz. 14½
Water	fl.oz. 8

Dissolve the calcium phosphate in the acid previously mixed with 12 fluidounces of water, filter, add the sugar and the remainder of the water, dissolve by agitation and strain.

II. Durand's:

Calcium phosphate, precipitated.....	gr. 256
Phosphoric acid, glacial.....	gr. 240
Sugar	av.oz. 15
Distilled water.....	fl.oz. 8
Spirit of lemon	drops 24

Mix the calcium phosphate with the water, heat moderately, gradually add the acid until all the calcium salt is dissolved, replace the water lost by evaporation, filter, dissolve the sugar in the filtrate, strain, if necessary, and add the spirit,

Syrup of Cascara Sagrada.

Fluid extract of cascara sagrada,
 Brit. Form. fl.oz. $3\frac{1}{4}$
 Fluid extract of licorice fl.oz. $2\frac{1}{2}$
 Carminative tincture. fl.dr. $1\frac{1}{2}$
 Simple syrup, enough to make. fl.oz. 16
 —Brit. Form.

Syrup of Cherries. (Syrupus Cerasorum.)

Crush black, sour cherries with the stones to a pulp, set aside in a covered vessel so that it will be at a temperature of about 20 degrees C., and stir occasionally. When 2 parts by measure of clear or filtered liquid and 1 of alcohol no longer become cloudy, the juice is to be strained with expression and filtered. To every 8 fluid-ounces of juice, add 15 av. ounces of sugar and $16\frac{1}{4}$ fluidounces of simple syrup, dissolve by agitation and strain.—Germ. Pharm.

Syrup of Chloral.

I.
 Chloral hydrate. gr. 320
 Distilled water. fl.dr. 6
 Simple syrup, enough to make fl.oz. 4
 Dissolve the chloral in the water and add the syrup.—Brit. Pharm.

II.
 Chloral hydrate. gr. 120
 Distilled water. fl.dr. 2
 Simple syrup. fl.oz. $3\frac{1}{2}$
 Spirit of peppermint. drops 4
 Dissolve the chloral in the water, add the syrup, and then the spirit.—Codex.

Syrup of Cinchona.

Tincture of cinchona. fl.oz. 8
 Simple syrup. fl.oz. 13
 —H.

Syrup of Cochineal. (Syrupus Coccinellæ.)

Cochineal powder. av.oz. $1\frac{1}{4}$
 Alcohol. fl.oz. $3\frac{1}{2}$
 Simple syrup. fl.oz. $12\frac{1}{2}$

Mix, let stand for several days, and strain through flannel.—H.

Syrup of Codeine.

I.
 Codeine sulphate. gr. 19
 Simple syrup. fl.oz. 4
 Reduce the codeine sulphate to a fine powder and dissolve it in the syrup previously warmed.

Each fluidram contains about $\frac{1}{2}$ gr. of codeine sulphate.—N. F

II.

Codeine (alkaloid). gr. 4
 Diluted alcohol. fl.dr. 2
 Distilled water. fl.dr. 2
 Simple syrup, enough to make. fl.oz. 4

Dissolve the codeine in the diluted alcohol and add the other ingredients.—Brit. Form.

III.

Codeine (alkaloid.) gr. 4
 Alcohol. fl.dr. 2
 Simple syrup, enough to make. fl.oz. 4

Dissolve the codeine in the alcohol and add the syrup.—Codex.

Syrup of Corydalis, Compound.

Corydalis root. gr. 600
 Twin-leaf root. gr. 800
 Blue flag root. gr. 150
 Sheep laurel leaves. gr. 150
 Sugar. av.oz. 10
 Simple syrup,
 Alcohol,
 Water. of each, sufficient

Reduce the mixed drugs to powder and extract by percolation in the usual way so as to obtain 10 fluidounces of product, using as a menstruum a mixture of alcohol and water in the proportion of 1 of the former to 2 of the latter; in the percolate dissolve the sugar by agitation or percolation, and add to the solution enough simple syrup to make 16 fluidounces.—Eclectic.

Syrup of Croton Chloral.

Croton chloral hydrate. gr. 256
 Simple syrup, enough to make fl.oz. 16

Dissolve the croton chloral in the syrup previously made hot.—Brit. Form.

Syrup of Creosote.

Glycerite of creosote. fl.oz. $2\frac{1}{2}$
 Simple syrup. fl.oz. $13\frac{1}{2}$
 This contains $1\frac{1}{2}$ per cent of creosote.

Syrup of Cubeb.

Fluid extract of cubeb. fl.oz. 2
 Magnesium carbonate. gr. 240
 Sugar. av.oz. 13
 Oil of bitter almond. drop 1
 Orange flower water. fl.oz. 2
 Water, enough to make. fl.oz. 16

Triturate the fluid extract with the magnesium carbonate, then add slowly, with constant trituration, 2 av. ounces of the sugar in small portions; when thoroughly mixed, add

gradually first the orange flower water, and then 7 fluidounces of water, triturating the mixture until the sugar is dissolved; filter and add sufficient water to make the filtrate measure 11 fluidounces in which the sugar is to be dissolved without heat; to the saccharine solution add the oil dissolved in a little alcohol, and then enough water to make 16 fluidounces.

Syrup of Digitalis.

Tincture of digitalis, U. S. P.f.dr. 6
Simple syrup, enough to make . . .f.oz. 16
—Codex.

Syrup of Ergotin.

Extract of ergot.gr. 195
Simple syrup.f.oz. 16
—H.

Syrup of Ether.

Etherf.dr. 4
Alcoholf.dr. 10
Distilled waterf.oz. 4½
Simple syrup, enough to make . . .f.oz. 16
—Codex.

Syrup of Eucalyptus.

Fluid extract of eucalyptus. . . .f.dr. 10
Magnesium carbonate.gr. 360
Waterf.oz. 8
Sugarav.oz. 15

Triturate the fluid extract with the magnesium carbonate, add the water gradually, let stand 1 hour, filter, and in the filtrate dissolve the sugar without heat.

Syrup of Fox Lungs. (Fuchs Lungen Saft.—Syrupus Pulmonum Vulpium.)

Pectoral elixir.f.dr. 10
Syrup of senna.f.dr. 22
Simple syrupf.dr. 21
Glycerinf.dr. 11
—H.

Syrup of Garlic, Artificial, Thompsonian.

Tincture of asafetidaf.dr. 1
Acetic acid, concentrated. . . .f.dr. 6
Simple syrupf.oz. 16

Syrup of Glycyrrhizin.

Ammoniated glycyrrhizingr. 180
Glycerinf.oz. 1
Waterf.oz. 8
Sugarav.oz. 12
Heat the water, add the glycyrrhizin, stir

until dissolved, filter, add the sugar and glycerin, shake until dissolved, and strain.

Syrup of Guaiac.

Guaiac, powderav.oz. 1½
Potassagr. 60
Sugarav.oz. 18
Waterf.oz. 8

Dissolve the potassa in the water, add the guaiac, macerate for 7 days, filter, add the sugar, dissolve, and strain.

Syrup of Horehound, Compound.

Red root.gr. 320
Elecampanegr. 320
Spikenardgr. 320
Comfreygr. 320
Wild cherry bark.gr. 320
Horehound.gr. 320
Blood rootgr. 160
Glycerin,
Alcohol,
Waterof each, sufficient
Sugarav.oz. 10

Mix the drugs, reduce to fine powder and extract by percolation in the usual way so as to obtain 10 fluidounces of percolate, using as a menstruum a mixture of 2 parts of water and 1 of alcohol by measure; in the percolate dissolve the sugar by agitation or percolation, and to this solution add enough glycerin to make 16 fluidounces.—Eclectic.

Syrup of Horseradish, Compound.

(Cough Elixir.—Vegetable Elixir.)

Fresh root of horseradish,
gratedav.oz. 1
Boneset.gr. 240
Canada snake root.gr. 120
Sugarav.oz. 14
Boiling water,
Diluted acetic acid . . .of each, sufficient

Add the horseradish to 4 fluidounces of diluted acetic acid, macerate for 2 days, express, and add enough of the acid to the expressed marc so that the liquid obtained by again expressing latter, added to the previous liquid, will make 4 fluidounces, express again, mix the two liquids and filter.

Infuse the boneset and snake root in the usual way so as to obtain 4 fluidounces of product.

Mix the two liquids and in this mixture dissolve the sugar by agitation or percolation.—Eclectic.

Syrup of Hypophosphites.

(Churchill's Syrup of Hypophosphites.)

I.

Calcium hypophosphite	gr. 845
Sodium hypophosphite	gr. 115
Potassium hypophosphite	gr. 115
Diluted hypophosphorous acid	m. 15
Sugar	av.oz. 8½
Spirit of lemon	fl.dr. 1¼
Water, enough to make	fl.oz. 16

Triturate the hypophosphites with 7 fluidounces of water until they are dissolved, add the spirit, and the acid, and filter. In the filtrate dissolve the sugar by agitation or percolation and add enough ~~water~~ through the filter to make 16 fluidounces. Strain, if necessary.—U. S. P.

II. Parrish's Formula:

Calcium hypophosphite	gr. 288
Sodium hypophosphite	gr. 96
Potassium hypophosphite	gr. 96
Sugar	av.oz. 12½
Distilled water, hot	fl.oz. 9
Orange flower water	fl.dr. 4

Make a solution of the hypophosphites in the hot water, filter, dissolve the sugar in the filtrate, strain, and to the colature add the orange flower water.

Syrup of Hypophosphites, Compound.**I.**

Calcium hypophosphite	gr. 256
Potassium hypophosphite	gr. 128
Sodium hypophosphite	gr. 128
Iron hypophosphite	gr. 16
Manganese hypophosphite	gr. 16
Potassium citrate	gr. 40
Citric acid	gr. 15
Quinine hydrochlorate	gr. 8
Tincture of nux vomica	m. 160
Sugar	av.oz. 13
Water	sufficient

Rub the hypophosphites of iron and of manganese with the potassium citrate and citric acid to powder, add 1 fluidounce of water, and warm the mixture a few minutes until a clear greenish solution is obtained. Introduce the other hypophosphites and the quinine hydrochlorate, previously triturated together, into a bottle, next add the sugar, the iron and manganese solution first prepared, the tincture of nux vomica, and, lastly, enough water to make up the volume, as soon as the sugar is saturated by the liquid, to 16 fluidounces. Agitate until solution

has been effected, and strain, if necessary.—N. F.

Syrup of Hypophosphite of Calcium.

Calcium hypophosphite	gr. 256
Citric acid	gr. 10
Sugar	av.oz. 18½
Water, enough to make	fl.oz. 16

Dissolve the calcium hypophosphite and citric acid in 8 fluidounces of water, filter the solution, add the sugar to the filtrate, and pass enough water through the filter to make the product, after the sugar has been dissolved by agitation, measure 16 fluidounces.

Each fluidram contains 2 gr. of calcium hypophosphite.—N. F.

Syrup of Hypophosphite of Calcium, Manganese and Potassium.

Calcium hypophosphite	gr. 256
Manganese hypophosphite	gr. 128
Potassium hypophosphite	gr. 128
Distilled water, boiling	fl.oz. 8¼
Simple syrup, enough to make	fl.oz. 16

Triturate the hypophosphites with the water, filter, and add the syrup.

Syrup of Hypophosphite of Calcium and Sodium.

Calcium hypophosphite	gr. 256
Sodium hypophosphite	gr. 256
Citric acid	gr. 10
Sugar	av.oz. 18½
Water, enough to make	fl.oz. 16

Dissolve the two hypophosphites and citric acid in 8 fluidounces of water, filter the solution, add the sugar to the filtrate, and pass enough water through the filter to make the product, after the sugar has been dissolved by agitation, measure 16 fluidounces.

Each fluidram contains 2 gr. each of calcium and sodium hypophosphites.—N. F.

Syrup of Hypophosphites with Iron.

Ferrous lactate, in crusts	gr. 72
Potassium citrate	gr. 72
Syrup of hypophosphites, enough to make	fl.oz. 16

Triturate the two salts with a small quantity of syrup gradually added, until they are dissolved, then add the remainder of the syrup.

This preparation should be freshly made when wanted.—U. S. P.

Syrup of Hypophosphite of Iron.

Iron hypophosphite.....gr. 128
 Potassium citrate.....gr. 180
 Orange flower water.....fl.oz. 1
 Simple syrup, enough to make fl.oz. 16

Dissolve the iron hypophosphite with the aid of the potassium citrate in the orange flower water, and add the syrup.

Each fluidram contains 1 gr. of hypophosphite of iron (ferric).—N. F.

Syrup of Hypophosphite of Manganese.

Manganese sulphate.....gr. 120
 Calcium hypophosphite.....gr. 80
 Sugar.....av.oz. 18
 Orange flower water.....fl.dr. 8
 Water.....sufficient

Dissolve the hypophosphite and sulphate in separate portions of water, mix the two solutions, filter, washing the precipitate in the filter with fresh distilled water; evaporate the filtrate to 8 fluidounces, dissolve the sugar in the latter, strain, and add the orange flower water. Each fluidounce contains $2\frac{1}{2}$ gr. of manganese hypophosphite.

Syrup of Hypophosphite of Sodium.

Sodium hypophosphite.....gr. 256
 Citric acid.....gr. 10
 Sugar.....av.oz. 18
 Water, enough to make.....fl.oz. 16

Dissolve the sodium hypophosphite and the citric acid in 8 fluidounces of water, and filter the solution. In this dissolve the sugar by agitation, and pass the remainder of the water through the filter.

Each fluidram contains 2 gr. of sodium hypophosphite.—N. F.

Syrup of Iron and Sodium Albuminate.

White of egg.....no. 4
 Sugar.....av.oz. 2
 Tinct. chloride of iron.....fl.oz. 2
 Solution of soda,
 Water.....of each, sufficient

Mix the white of egg with the sugar and add enough water to effect complete solution; add the tincture of iron, and then just enough of the solution of soda to dissolve the coagulated albumen; finally make up to 16 fluidounces with water.

Syrup of Iron (Ferric) Chloride.**I.**

Solution of iron chloride.....fl.dr. 2
 Simple syrup, enough to make.....fl.oz. 16
 —Codex.

II.

Tincture of chloride of iron....fl.oz. 1
 Sodium citrate.....av.oz. 2
 Water.....fl.oz. 6
 Sugar.....av.oz. 10
 Syrup, enough to make.....fl.oz. 16

Mix the tincture of ferric chloride with the water and dissolve in this mixture the sodium citrate and the sugar with the aid of heat; when cold add sufficient syrup to make 16 fluidounces.

Syrup of Iron (Ferrous) Chloride.

See Syrup of Iron Protochloride.—N. F.

Syrup of Iron Citrate.

Iron citrate, soluble.....gr. 240
 Distilled water, hot.....fl.dr. 4
 Simple syrup, enough to make fl.oz. 16
 —Codex.

Syrup of Iron Hypophosphite.

See Syrup of Hypophosphites.

Syrup of Iron and Quinine Iodides.**I. Bouchardat's formula:**

Iodine.....gr. 42
 Iron, in powder.....gr. 17
 Simple syrup.....fl.oz. $15\frac{1}{2}$
 Quinine sulphate.....gr. 8
 Diluted sulphuric acid.....sufficient
 Distilled water.....fl.dr. $4\frac{1}{2}$

Digest the iodine, iron, and 3 fluidrams of the water until the red-brown color of the iodine has disappeared; filter through a small filter into the syrup. Then dissolve the sulphate of quinine in $1\frac{1}{2}$ fluidrams of water with the aid of diluted sulphuric acid and mix this solution with the previously prepared syrup.

II.

Quinine sulphate.....gr. 20
 Hypophosphorous acid, diluted, sufficient
 Potassium iodide.....gr. 8
 Simple syrup, enough to make.....fl.oz. 8
 Syrup of iron iodide (U. S.)...fl.oz. 8

To the quinine sulphate add about 10 drops of commercial solution of hypophosphorous acid and then a small amount of syrup; when the quinine salt is dissolved,

add the remainder of the syrup and afterwards the potassium iodide dissolved in a few drops of water; mix well. Now add the syrup of iron iodide and mix. Should any cloudiness appear, clear it up by a few drops of the hypophosphorous acid.

A fluidram of this syrup contains about 4 gr. of dry iodide of iron and about 6 gr. of hydriodide of quinine.

Syrup of Iron and Ammonium Phosphate.

Iron sulphate.....gr. 685
Sodium phosphate.....gr. 820
Glacial phosphoric acid, C. P. .gr. 900
Ammonia water.....sufficient
Sugarav.oz. 18½
Distilled water.....sufficient

Dissolve the sodium phosphate and the iron sulphate separately in distilled water, mix the solution, and wash the resulting precipitated iron phosphate. Then to one-half of the phosphoric acid, dissolved in 2¼ fluidounces of water, add ammonia water until exactly neutral. To the remainder of the phosphoric acid, dissolved in a like amount of water, add the moist iron phosphate and dissolve by the aid of a gentle heat; then add the solution of ammonium phosphate and the sugar, dissolve the whole, strain, and evaporate to 16 fluidounces.

Each fluidram contains 4½ gr. iron phosphate, 4¾ gr. ammonium phosphate, and 3½ gr. of phosphoric acid.

Syrup of Iron and Ammonium Tartrate.

Tartrate of iron and potassium. gr. 225
Distilled water, hot.....fl.dr. 4
Simple syrup, enough to make fl.oz. 16

Dissolve the iron salt in the water and add the syrup.—Codex.

Syrup of Iron Iodohydrargyrate.

Syrup of iodide of iron.....fl.oz. 15
Red iodide of mercury.....gr. 3

Syrup of Iron and Potassium Tartrate.

Tartrate of iron and potassium. gr. 225
Distilled water, hot.....fl.dr. 4
Simple syrup, enough to make fl.oz. 16

Dissolve the iron salt in the water and add the syrup.—Codex.

Syrup of Iron Pyrophosphate.

Iron pyrophosphate, soluble.....gr. 90
Distilled water.....fl.dr. 4
Simple syrup, enough to make. fl.oz. 16
—Codex.

Syrup of Liquidambar.

Sweet-gum bark, coarsely powdered.....av.oz. 2½
Sugarav.oz. 14
Watersufficient

Moisten the bark thoroughly with water, macerate in a close vessel for 24 hours, pack in a percolator, and pour on water until 8 fluidounces of percolate are obtained. In this dissolve the sugar by agitation or percolation.—Eclectic.

This has been recommended for the bowel complaints of children, also for chronic cough and mucous affections.

Syrup of Lobelia.

Vinegar of lobeliafl.oz. 8
Sugarav.oz. 16

Dissolve by aid of heat not exceeding 82 degs. C.; continue heat for 8 hours, removing any scum that may form, and strain while hot.—Eclectic.

Syrup of Lobelia, Thompsonian.

Lobelia seedav.oz. 1
Waterfl.oz. 16
Vinegarfl.oz. 1
Sugarav.oz. 18
Tincture of lobelia.....fl.oz. 4

Boil the lobelia with the water and vinegar for one-half hour, occasionally replacing the water lost by evaporation, then strain, add the sugar, dissolve, and add the tincture.

Syrup of Maidenhair. (Syrupus Capilli Veneris.)

Maidenhair.... gr. 320
Distilled water, hot.....fl.oz. 10
Sugarav.oz. 11

Macerate the fern with the water for 6 hours, strain, add the sugar and dissolve.—Codex.

Syrup of Manganese Iodide.

Manganese sulphate.....gr. 960
Potassium iodide.....gr. 1140
Sugar.....av.oz. 18
Distilled water,
Simple syrupof each, sufficient

Dissolve the two salts each in 3 fluidounces of water to which 2 fluidrams of syrup have

been added, mix them, place in a cool location for at least one-half hour, filter, allowing the filtrate to pass into a bottle containing the sugar; add sufficient water through the filter to make the whole measure 16 fluidounces, dissolve the sugar by agitation, and filter if necessary.

Each fluidram contains about $7\frac{1}{2}$ gr. of manganese iodide.

Syrup of Manganese Hypophosphite.

See Syrup of Hypophosphite of Manganese.

Syrup of Manganese Phosphate.

Manganese sulphate	gr. 920
Sodium phosphate .av.oz.	$8\frac{1}{2}$ or sufficient
Hydrochloric acid	f.dr. 5
Sugar	av.oz. $18\frac{3}{4}$
Water, enough to make	f.oz. 16

Dissolve the salts separately in 10 fluidounces of water, and add solution of sodium phosphate to the solution of manganese sulphate as long as it produces a precipitate, which wash with cold water, and then dissolve by means of the hydrochloric acid; dilute this solution till it measure $8\frac{3}{4}$ fluidounces, and in this dissolve the sugar.

Each fluidram contains 5 gr. of manganese phosphate.

Syrup of Mercury Iodide. (Syrup of Gibert.)

Red iodide of mercury	gr. 8
Potassium iodide	gr. 120
Water	f.dr. 8
Simple syrup, enough to make	f.oz. 10

Dissolve the mercuric and potassium iodides in the water and add the syrup.

Syrup of Mitchella, Compound.

(Compound Syrup of Partridge Berry.—Mother's Cordial.—Compound Syrup of Squaw Vine.)

Mitchella	gr. 960
Helonias root	gr. 240
Cramp bark	gr. 240
Blue cohosh	gr. 240
Oil of sassafras	drops 4
Sugar	av.oz. 10
Water, Alcohol	of each, sufficient

Mix the drugs, reduce to powder, add the oil, and percolate in the usual manner so as to obtain 11 fluidounces of product, using as

a menstruum a mixture of 1 part of alcohol by measure and 2 of water; in this percolate dissolve the sugar.—Eclectic.

Syrup of Nickel Bromide.

Nickel bromide	gr. 320
Glycerin	f.oz. 1
Water	f.oz. 8
Sugar	av.oz. 16

Dissolve the nickel bromide in the water, filter, add the glycerin, and in this mixture dissolve the sugar by agitation or percolation.

Syrup Opiated. (Syrupus Opiatus.)

Extract of opium	gr. $19\frac{1}{2}$
Water	f.dr. 2
Simple syrup, enough to make	f.oz. 16

Dissolve the extract in the water and add the syrup.—Codex.

Syrup of Osmunda, Compound.

Osmunda	gr. 600
Burdock	gr. 300
Yellow dock	gr. 300
Turkey corn	gr. 300
Comfrey	gr. 300
Stillingia	gr. 300
Prickly ash berries	gr. 300
Calamus	gr. 75
Sugar	av.oz. $8\frac{1}{2}$
Diluted alcohol	sufficient

Grind drugs to coarse powder, extract them by percolation with diluted alcohol to make $11\frac{1}{2}$ fluidounces of product, in which the sugar is to be dissolved.—Eclectic.

Syrup of Peppermint.

Peppermint, herb, cut	gr. 324
Alcohol	f.dr. $8\frac{1}{2}$
Water	f.oz. $4\frac{1}{2}$
Sugar	av.oz. $6\frac{1}{4}$
Simple syrup	f.oz. 8

Moisten the drug with the alcohol, add the water, let macerate for 24 hours, express, add the sugar and syrup and dissolve by agitation.—Germ. Pharm.

Syrup of Peru Balsam.

Peru balsam	av.oz. 1
Sugar, Water	of each, sufficient

Upon the balsam pour 10 fluidounces of hot water, set aside for 24 hours, occasionally agitating, filter, and in 8 fluidounces of filtrate dissolve 18 av. ounces of sugar.—Germ. Form.

Syrup of Poke Root, Compound.

Poke root	gr. 640
American ivy bark	gr. 640
Black cohosh	gr. 320
Sheep laurel	gr. 320
Oil of saffraas	drops 3
Oil of wintergreen	drops 3
Sugar	av.oz. 10
Alcohol,	
Water,	
Simple syrup	of each, sufficient

Mix the drugs, reduce to fine powder, add the oils, and extract by percolation so as to obtain 10 fluidounces of percolate, using as a menstruum a mixture of 1 part of alcohol by measure and 2 of water. In this dissolve the sugar, and then add enough simple syrup to make 16 fluidounces.—Eclectic.

Syrup of Quinine Sulphate.

Quinine sulphate	gr. 96
Diluted sulphuric acid	m. 80
Distilled water	fl.dr. 6
Simple syrup, enough to make ..	fl.oz. 16

Dissolve the quinine in the acid and water and add the syrup.—Codex.

Syrup, of Restorative, Thompsonian.

(Restorative Cordial, "Number five.")

American poplar	gr. 144
European poplar	gr. 144
Bayberry root bark	gr. 288
Water	fl.oz. 10½
Sugar	av.oz. 8¾

Boil the drugs for a few minutes with the water, strain, add the sugar, then 150 gr. of peachmeat reduced to fine condition and finally 4 fluidounces of brandy (or tincture of myrrh).

Syrup of Rhubarb and Potassium, Compound. (Neutralizing Cordial.)

I.

Rhubarb	gr. 240
Hydrastis	gr. 120
Cinnamon	gr. 120
Potassium carbonate	gr. 240
Oil of peppermint	drops 5
Sugar	av.oz. 14
Alcohol	fl.oz. 8
Water	fl.oz. 16

Dissolve the potassium carbonate in a portion of the water and mix in a suitable sized container with the rhubarb, hydrastis and cinnamon, the last three being in fine powder. Now add the alcohol and the remainder

of the water and allow to stand for 48 hours, agitating the whole briskly at frequent intervals. Decant the clear portion, and filter the remainder through absorbent cotton, adding sufficient water through the filter to make the whole measure 24 fluidounces. In this dissolve the sugar by agitation, and add the oil of peppermint.—Eclectic.

II.

Fluid extract of rhubarb	fl.dr. 4½
Fluid extract of golden seal	fl.dr. 2½
Potassium carbonate	gr. 126
Simple syrup	fl.oz. 4
Tincture of cinnamon	fl.oz. 1
Spirit of peppermint	fl.dr. 1
Diluted alcohol, enough to make	fl.oz. 16

Dissolve the potassium carbonate in the syrup, and add the solution to the fluid extracts, tincture and spirit, previously mixed with 10 fluidounces of diluted alcohol. Mix well, add the remainder of the diluted alcohol, and filter, if necessary.

Syrup of Saccharin.

Saccharin	gr. 150
Sodium carbonate, pure	gr. 165
(Or sodium bicarbonate, pure ..)	gr. 180)
Distilled water	fl.oz. 32

Dissolve by the aid of a gentle heat.

This may be employed as a substitute for simple syrup.

Syrup of Senna with Manna. (Syrupus Mannatus.—Compound Syrup of Manna.)

Syrup of senna, U. S. P	fl.oz. 4
Syrup of manna, N. F.	fl.oz. 4
—Germ. Pharm.	

Syrup of Starch Iodide.

Iodine	gr. 30
Starch	gr. 250
Ether,	
Water,	
Sugar	of each, sufficient

Dissolve the iodine in ether, pour the solution on the starch and triturate until all the ether has evaporated. Then transfer the mixture to a porcelain capsule and heat on a water bath for one-half hour, stirring very frequently. At first considerable iodine vapor is evolved, but this soon ceases. From the soluble starch iodide thus formed, the

syrup may be prepared by dissolving 84 gr. in $7\frac{1}{2}$ fluidounces hot water, and in the solution dissolving 14 av.ounces of sugar.

This syrup represents 1-10 per cent of iodine.

Syrup, Strengthening, Thompsonian.

Comfrey.....	av.oz.	2
Elecampane.....	av.oz.	1
Hoarhound.....	av.oz.	$\frac{1}{2}$
Water.....	fl.oz.	48
Beth root, powder.....	gr.	120
Brandy.....	fl.oz.	8
Sugar.....	av.oz.	8

Boil the first three drugs with the water until 24 fluidounces of liquid can be obtained, strain, add the remaining ingredients, and shake occasionally until the sugar is dissolved.

Syrup of Strychnine Sulphate.

Strychnine sulphate.....	gr.	$2\frac{1}{2}$
Distilled water.....	fl.dr.	$\frac{1}{2}$
Simple syrup, enough to make.....	fl.oz.	8

Dissolve the strychnine in the water and add the syrup.—Codex.

Syrup of Superphosphate of Iron.

Add freshly precipitated iron phosphate (see manner of preparation under Syrup of Iron and Ammonium Phosphate) to saturation to a boiling solution of glacial phosphoric acid. On concentrating and cooling, the product forms a soft mass, which is freely soluble in water in all proportions and is free from inky taste.

The syrup may be prepared by dissolving 5 gr. of this substance in a fluidram of simple syrup.

Syrup of Sweet Gum.

See Syrup of Liquidambar.

Syrup of Tar, Compound.

Fluid extract of licorice.....	fl.oz.	2
Paregoric.....	fl.oz.	2
Syrup of ipecac.....	fl.oz.	2
Glycerite of tar.....	fl.dr.	4
Syrup of tolu, enough to make.....	fl.oz.	16

Syrup of Tartaric Acid.

Tartaric acid.....	gr.	100
Distilled water.....	fl.dr.	2
Simple syrup.....	fl.oz.	$15\frac{3}{4}$

Dissolve the acid in the water and add to the syrup.

If this solution be flavored with spirit of

lemon or spirit of orange, it may be called syrup of lemon or syrup of orange.—Codex.

Syrup of Tolu.

The following is employed very largely and furnishes an excellent product:

Tincture of tolu.....	fl.oz.	2
Magnesium carbonate.....	gr.	120
Sugar.....	av.oz.	$28\frac{1}{2}$
Water.....	fl.oz.	16

Triturate the tincture with the magnesium compound and 2 ounces of sugar to a smooth paste, gradually add the remainder of the sugar, stirring constantly meanwhile, filter, and in the filtrate dissolve the remainder of the sugar by agitation or percolation.—U. S. P. 1870.

Syrup of Trifolium, Compound.

(Syrup of Red Clover Blossom.—Syrup of Red Clover, Compound.)

Fluid extract of trifolium blossoms.....	fl.oz.	1
Fluid extract of berberis aquifolium.....	fl.dr.	4
Fluid extract of poke root.....	fl.dr.	4
Fluid extract of burdock.....	fl.dr.	4
Fluid extract of cascara amarga.....	fl.dr.	4
Fluid extract of stillingia.....	fl.dr.	4
Fluid ext. of prickly ash bark.....	fl.dr.	1
Potassium iodide.....	gr.	128
Simple syrup, enough to make.....	fl.oz.	16

Syrup of Turpentine.

Gum turpentine.....	gr.	320
Magnesium carbonate.....	gr.	160
Tincture of tolu.....	fl.dr.	$2\frac{1}{2}$
Glycerin.....	fl.dr.	12
Gum arabic.....	av.oz.	$1\frac{1}{2}$
Sugar.....	av.oz.	18
Water, enough to make.....	fl.oz.	16

Triturate the first three together, add 6 fluidounces of water, filter, add the other ingredients, shake until dissolved, and strain.

Syrup of Uva Ursi, Compound.

Fluid extract of uva ursi.....	fl.oz.	1
Fluid extract of buchu.....	fl.oz.	1
Fluid extract of cubebs.....	fl.oz.	1
Sweet spirit of nitre.....	fl.oz.	1
Simple syrup.....	fl.oz.	8

Syrup of Valerian, Compound.

Fluid extract of valerian.....	fl.oz.	4
Fluid extract of scullcap.....	fl.oz.	2
Tincture of hyoscyamus.....	fl.oz.	2
Spirit of wintergreen.....	fl.dr.	4
Simple syrup, enough to make.....	fl.oz.	16

Syrup of White Pine, Compound.

White pine bark	gr. 576
Wild cherry bark	gr. 576
Spikenard root	gr. 80
Balm of gilead buds	gr. 80
Sanguinaria root	gr. 64
Sassafras bark	gr. 56
Morphine sulphate	gr. 4
Chloroform	gr. 50
Sugar	av.oz. 18
Alcohol,	
Water,	
Simple syrup	of each, sufficient

Reduce the vegetable drugs to moderately coarse powder, moisten the powder with a menstruum composed of 1 volume of alcohol and 3 volumes of water, and macerate for 12 hours. Then percolate with the same menstruum until 8 fluidounces of tincture have been obtained, in which dissolve the sugar and the morphine sulphate; lastly, add the chloroform, and sufficient syrup to make 16 fluidounces, and strain.—N. F.

Syrup of Wild Cherry, Compound.

Wild cherry	av.oz. 2
Spikenard	av.oz. $\frac{1}{2}$
Ipecac	gr. 160
Bloodroot	gr. 55
Tincture of opium	fl.dr. 4
Sugar	av.oz. 12
Alcohol,	
Water	of each, sufficient

Mix the drugs and reduce to tolerably fine powder and extract them by percolation in the usual way, using a menstruum consisting of alcohol and water in the proportions of 1 of the former and 2 of the latter by measure, obtaining 10 fluidounces of percolate; in this dissolve the sugar by agitation or percolation.

Syrup of Wild Cherry and Hoarhound.

Wild cherry bark, coarse powder	av.oz. 4
Hoarhound	av.oz. 1
Glycerin	fl.oz. 1
Alcohol	fl.oz. 1
Sugar	av.oz. 12
Water	sufficient

Mix the glycerin and alcohol with 8 fluidounces of water; moisten the wild cherry and hoarhound with 2 fluidounces of this mixture, pack in a cylindrical percolator tightly covered; after 24 hours' maceration proceed with percolation, using the remainder of the

menstruum, and afterward sufficient water to make 10 fluidounces of percolate; in this dissolve the sugar by agitation, without heat, and strain.

Syrup of Wintergreen.

Wintergreen leaves	av.oz. 2
Boiling water	sufficient
Sugar	av.oz. 12
Oil of wintergreen	drops 5

Infuse the leaves in enough water to complete 8 fluidounces of infusion; in it dissolve the sugar with the aid of heat, and when the syrup is nearly cold add the oil previously dissolved in a small amount of alcohol.

Syrup of Wormwood. (Syrup of Absinthium.)

Wormwood	av.oz. 1
Boiling water	fl.oz. 8
Sugar	av.oz. 14

Infuse the drug with the water for 12 hours, strain with expression, and filter, and in the filtrate dissolve the sugar by agitation or percolation.

Syrup of Yellow Dock, Compound.

(Compound Syrup of Rumex.—Scrofulous Syrup.)

Yellow dock	gr. 480
False bittersweet	gr. 240
American ivy bark	gr. 120
Figwort	gr. 120
Alcohol,	
Water	of each, sufficient
Sugar	av.oz. 10

Mix the drug, reduce to fine powder and extract by percolation so as to obtain 10 fluidounces of product, using a menstruum composed of 1 part of alcohol by measure to 2 of water; in this percolate dissolve the sugar by agitation or percolation.—Eclectic.

Syrup of Yerba Santa.

Fluid extract of eriodictyon	fl.oz. 1
Calcined magnesia	av.oz. $\frac{1}{2}$
Water	fl.oz. $7\frac{1}{2}$
Sugar	av.oz. 14

Mix the fluid extract with the calcined magnesia and add the water gradually, with constant stirring; let it stand 24 hours and filter; add the sugar and dissolve with the aid of gentle heat.

Syrup of Yerba Santa, Aromatic.

(Aromatic Syrup of Eriodictyon.)

Fluid extract of yerba santa . . . fl.dr.	4
Solution of potassa fl.dr.	3
Compound tincture of carda- mom fl.oz.	1
Oil of sassafras drops	4
Oil of lemon drops	4
Oil of cloves drops	8
Alcohol fl.dr.	4
Sugar av.oz.	14
Water, enough to make fl.oz.	16

Mix the fluid extract and solution of potassa, then add 12 fluidrams of water previously mixed with the compound tincture of cardamom, and afterwards add the oils dissolved in the alcohol. Shake the mixture thoroughly, then filter it, and pour enough water through the filter to obtain 6 fluidounces of filtrate. Pour this upon the sugar contained in a bottle, and dissolve it by placing the bottle in hot water, frequently agitating. Lastly, cool the product and add enough water, passed through the filter previously used, to make 16 fluidounces.—N. F.

Other syrups are mentioned in Parts II, IV and V.

Tablets, Antiseptic, Dr. C. M. Wilson's.

Each tablet should contain:

Corrosive sublimate gr.	7.7
Ammonium chloride gr.	7.8

If added to 16 fluidounces of water, the product will represent a solution of 1 in 1000.

Tallows.

Refer to Suets.

Teas.

Refer to Species.

Thomsonian Remedies.

"Number one" is lobelia.

"Number two" is capsicum.

"Number three" is bayberry, sumach and capsicum.

"Number four" is the "bitters." See Bitters.

"Number five" is restorative syrup or cordial. See Syrups.

"Number six," hot drops or rheumatic drops. See Tincture of Capsicum and Myrrh.

"Third Preparation:"

Lobelia seed gr.	480
Capsicum gr.	480
Cypripedium, powder, an even teaspoonful.	
Number six fl.oz.	12

Macerate and retain liquid on dregs.

Brown lobelia is lobelia seed.

Green lobelia is lobelia herb.

Camphor julep. See Camphor.

Conserve of hollyhock. Refer to Confections.

Ointment, astringent. See Ointments.

Pills, iron, compound. See Pills.

Poultice, charcoal:

Charcoal av.oz.	3
Ginger av.oz.	1
Bayberry av.oz.	1
Slippery elm av.oz.	3
Water, hot	sufficient

Powder, composition. See N. F.

Powder, cough. See Powders.

Powder, nerve. See Powders.

Salve. See Ointments.

Syrup of bayberry. See Syrups.

Syrup of garlic, artificial. See Syrups.

Syrup of lobelia. See Syrups.

Syrup or cordial, restoratives. See Syrups.

Syrup, strengthening. See Syrups.

Tincture of Aconite Leaf.

Aconite leaves, powder gr.	960
Diluted alcohol	sufficient

Extract the drug by percolation so as to obtain 16 fluidounces of product.—U. S. P. 1870.

This preparation must not be confounded with tincture of aconite (root) U. S. P. or Fleming's tincture of aconite N. F.

Tincture of Asarum.

Canada snake-root, powder . . . av.oz.	4
Alcohol, sufficient to make . . . fl.oz.	16

Tincture of Arbor Vitæ. (Tincture Thuja.)

Arbor vitæ, fresh tops av.oz.	3½
Alcohol, enough to make fl.oz.	16

Macerate the arbor vitæ with 16 fluidounces of alcohol for 7 days, then decant the liquid, express the residue, treat the latter with fresh portions of alcohol, expressing forcibly each time, until 16 fluidounces of liquid are obtained, and finally filter the latter.

Tincture of Asafetida, Compound.

Asafetida	gr. 200
Lupulin	gr. 200
Stramonium seed	gr. 200
Valerian root	gr. 200
Alcohol	fl.oz. 20

Mix the drugs, reduce to coarse powder, add the alcohol, macerate for 14 days, strain, express and filter.—Eclectic.

Tincture of Avena Sativa, Homeopathic. (Tincture of Oats.)

Oats, unhusked	av.oz. 8
Potassium carbonate,	
Water,	
Alcohol	of each, sufficient

Grind the oats to moderately fine powder, moisten with a 5 per cent aqueous solution of potassium carbonate—first warmed to 45 degs. C.—macerate for 3 hours, pack in a percolator and add alcohol until 16 fluidounces of product are obtained.

Tincture of Bees, (Honey.) (Tinctura Apis Mellificæ.)

Collect quantity of living honey-bees in a bottle, agitate the latter so as to irritate them and then cover them with alcohol; after a few days, the liquid is ready for use.—Eclectic.

Tincture of Black Cohosh, Compound. (Compound Tincture of Cimicifuga.)

Tincture of black cohosh	fl.oz. 8¼
Tincture of blood root, U. S. P. ..	fl.oz. 6
Tincture of poke root	fl.oz. 1¼

—Eclectic.

Tincture of Bloodroot, Compound. (Emetic Tincture.)

Blood root	av.oz. 1
Lobelia herb	av.oz. 1
Skunk cabbage	av.oz. 1
Diluted alcohol	sufficient

Extract the mixed drugs in fine powder by percolation with diluted alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Blue Cohosh.

Blue cohosh, fine powder	av.oz. 8¼
Alcohol	sufficient

Extract the drug by percolation with alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Blue Cohosh, Compound.

Blue cohosh, fine powder	gr. 640
Ergot, fine powder	gr. 320
Water pepper, fine powder	gr. 320
Oil of savin	fl.dr. 2½
Alcohol	sufficient

Extract the mixed drugs by percolation with alcohol, so that the percolate with the oil added will make 16 fluidounces.—Eclectic.

Tincture of Blue Flag.

Blue flag, fine powder	av.oz. 3¼
Alcohol	sufficient

Extract the drug by percolation with alcohol, so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Buchu.

Buchu, coarse powder	av.oz. 2
Diluted alcohol	sufficient

Extract the drug by percolation so as to obtain 16 fluidounces of product.—Brit. Pharm.

Tincture of Burdock Seed.

Burdock seed, ground	av.oz. 4½
Water,	
Alcohol	of each, sufficient

Mix the liquids in the proportion of 1 by measure of the water to 3 of the alcohol, and percolate the drug in the usual way, until 16 fluidounces of percolate are obtained.

Tincture of Cacao. (Tincture of Theobroma.)

Cacao beans, freshly roasted ..	av.oz. 16
Cinnamon	av.oz. 2
Tincture of vanilla, U. S. P.	fl.oz. 2½
Diluted alcohol, enough to make	fl.oz. 16

Reduce the cacao beans and the cinnamon to moderately fine powder, add 16 fluidounces of diluted alcohol, macerate for 4 or 5 days, agitating occasionally, transfer to a glass percolator and percolate, adding sufficient more of the diluted alcohol to make the percolate, including the tincture of vanilla, measure 16 fluidounces.

Tincture of Cactus Grandiflorus.

Fresh flowers and stems of	
cactus grandiflorus	av.oz. 4½
Alcohol	fl.oz. 16

Macerate for 14 days, occasionally agitating, express and filter.—Eclectic.

Tincture of Cajuput, Compound.

Oil of cajuput.....fl.oz. 4
 Oil of peppermint.....fl.oz. 4
 Oil of cloves.....fl.oz. 4
 Alcohol.....fl.oz. 4

Tincture of Calamus.

Calamus, coarse powder.....av.oz. 3
 Water.....fl.oz. 4½
 Alcohol.....fl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression and filter.—
 Germ. Pharm.

Tincture of Carduus Mariæ, Rademacher's. (Tincture of Mary Thistle.)

Carduus Mariæ fruit, whole...av.oz. 10
 Alcohol.....fl.oz. 12
 Distilled water.....fl.oz. 10

Macerate for 8 days, then filter. The fruit is used whole, owing to its highly mucilaginous character.

Tincture, Carminative.

Cardamom seed, bruised.....gr. 480
 Tincture of ginger.....fl.oz. 2½
 Oil of cinnamon.....m. 80
 Oil of cloves.....m. 80
 Oil of caraway.....m. 80
 Alcohol, enough to make....fl.oz. 16

Macerate the cardamom with 12 fluid-ounces of alcohol for 7 days, decant the liquid, express the residue, filter the entire liquid, add the oils to the filtrate, and finally add the remainder of the alcohol.—Brit. Form.

Tincture of Cascara Sagrada.

Cascara sagrada, coarse powder av.oz. 3
 Water.....fl.oz. 5¾
 Alcohol.....fl.oz. 11½

Mix, macerate for 10 days, agitating occasionally, express, and filter.—Codex.

Tincture of Castor.

Castor (Russian preferred)....av.oz. 1¼
 Alcohol.....sufficient

Reduce the castor to as fine a condition as possible, macerate with the alcohol for 14 days, occasionally agitating, express, and filter, adding enough alcohol through the filter to make the liquid measure 16 fluid-ounces.—Eclectic.

Tincture of Castor, Ammoniated.

Castor.....gr. 480
 Asafetida.....gr. 240
 Spirit of ammonia.....fl.oz. 16

Reduce the drugs to coarse powder, add the spirit, macerate for 7 days, agitating occasionally, and express.—Eclectic.

Tincture of Celandine, Rademacher's. (Tincture of Chelidonium.)

Fresh herb of chelidonium majus.....av.oz. 10
 Alcohol.....fl.oz. 12

Contuse the herb tea to a pulp, add the alcohol, macerate for 8 days, express, and filter.

Tincture of Chinoidin.

Chinoidin.....av.oz. 1½
 Alcohol.....fl.oz. 11¼
 Hydrochloric acid.....fl.dr. 6
 Water.....fl.oz. 3¾
 —Germ. and Swed. Pharm.

Tincture of Chloroform, Compound.

Chloroform.....fl.oz. 1
 Alcohol.....fl.oz. 4
 Compound tincture of cardamom.....fl.oz. 5
 —Brit. Pharm.

Tincture of Cinnamon, Compound.

Cinnamon.....gr. 240
 Cardamom.....gr. 90
 Prickly-ash berries.....gr. 90
 Ginger.....gr. 90
 Diluted alcohol.....sufficient

Extract the mixed drugs in fine powder by percolation so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Cocculus Indicus, Homeopathic.

Cocculus Indicus, powder.....av.oz. 8
 Alcohol.....fl.oz. 16
 Water.....fl.dr. 10

Place all in a well-corked bottle, and macerate for 8 days, shaking the bottle well twice a day; then press out and filter. This makes the mother tincture.

Tincture of Cochineal.

Cochineal, powder.....av.oz. 2
 Diluted alcohol, enough to make fl.oz. 16

Extract the drug by percolation or maceration.—Brit. Pharm.

The product may be used for coloring elixirs and other preparations.

Tincture of Cochineal, Rademacher's.
(Tinctura Coccionellæ.)

Cochineal, coarse powder.....av.oz. 1
Alcohol.....fl.oz. 11

Macerate for 8 days, agitating occasionally, and filter.

Tincture of Colchicum, Compound.

Tincture of colchicum seed.....fl.oz. 8
Tincture of black cohosh.....fl.oz. 8
—Eclectic.

Tincture of Colocynth.

Colocynth, with seeds, cut
coarse.....av.oz. 1½
Alcohol.....sufficient

Percolate alcohol through the drug so as to obtain 16 fluidounces of tincture.—Germ. Pharm.

Tincture of Colocynth Seed, Rademacher's.

Colocynth seed.....av.oz. 8
Alcohol.....sufficient

Wash the seed with water, dry it, reduce to coarse powder, add 16½ fluidounces of alcohol. Macerate for 14 days, agitating, express, filter, and add enough alcohol to the filtrate to make 16 fluidounces.

Tincture of Conium.

Conium seed, powder.....av.oz. 2¼
Diluted hydrochloric acid.....fl.dr. ½
Diluted alcohol.....sufficient

Extract the drug by percolation so as to obtain 16 fluidounces of product, adding the acid to that portion of the diluted alcohol which is used for moistening the drug.—U. S. P. 1880.

Tincture of Convallaria. (Tincture of Lily of the Valley.)

Lily of the valley flowers and
stalks, dried, coarse powder..av.oz. 2
Diluted alcohol.....sufficient

Extract the drug by percolation, so as to make 16 fluidounces of product.—Brit. Form.

Tincture of Copper Acetate, Rademacher's.

Copper sulphate, pure.....gr. 675
Lead acetate, pure.....gr. 840
Distilled water.....fl.oz. 8½
Alcohol.....fl.oz. 7½

Triturate the two salts together until a

smooth paste is formed, transfer this to a copper vessel, add the water, heat to boiling, allow to cool, add the alcohol, set aside for 4 weeks, agitating frequently, and filter.

A more expeditious process is the following:

Copper acetate, crystallized.....gr. 480
Distilled water.....fl.oz. 9
Alcohol.....fl.oz. 7

Dissolve the acetate in the water previously warmed and filter.

Tincture of Corydalis. (Tincture of Turkey Corn.)

Turkey corn, fine powder.....av.oz. 3¼
Diluted alcohol.....sufficient

Extract the drug by percolation with diluted alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Culver's Root. (Tincture of Leptandra.)

Culver's root.....av.oz. 3¼
Diluted alcohol.....sufficient

Extract the drug in moderately fine powder by percolation so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Digitalis, Etheral.

Digitalis, cut fine.....av.oz. 1¼
Spirit of ether.....fl.oz. 16

Mix, macerate for 7 days, and filter.

Tincture of Ergot.

Ergot, powder.....av.oz. 4
Diluted alcohol.....sufficient

Percolate the drug so as to obtain 16 fluidounces of tincture.—Brit. Pharm.

Tincture of Eucalyptus.

Eucalyptus powder.....av.oz. 3¼
Alcohol.....sufficient

Extract the drug by percolation so as to obtain 16 fluidounces of product.—Brit. Form.

Tincture of Golden Rod, Rademacher's. (Tinctura Virgæ Aureæ.)

Fresh herb of golden rods.....av.oz. 10
Alcohol.....fl.oz. 12

Contuse the herb to a pulp, add the alcohol, macerate for 8 days, express, and filter.

Tincture of Golden Seal, Compound.

Tincture of golden seal, U.
 S. P. fl.oz. $9\frac{1}{2}$
 Tincture of lobelia. fl.oz. $6\frac{1}{2}$
 —Eclectic.

Tincture of Guaiac, Aromatic.

Refer to Greenhow's Cholera Mixture.

Tincture of Hips, Rademacher's.

(Tinctura Cynosbati.)

Fresh rose hips, cut fine. av.oz. 2
 Alcohol. sufficient

Macerate the hips with 12 fluidounces of alcohol, agitating frequently, express, filter and add enough alcohol to the filtrate to make 12 fluidounces.

Tincture of Iodine, Compound.

Iodine gr. 240
 Potassium iodide. gr. 480
 Alcohol fl.oz. 16
 Mix and dissolve.—U. S. P. 1870.

This must not be confused with the compound solution of iodine of the present pharmacopoeia.

Tincture of Iron, Compound.

Tincture of ferrated extract of
 apples, N. F. fl.oz. 8
 Vinous tincture of rhubarb fl.oz. 8
 Tincture of nux vomica fl.oz. 1

See also next formula.

Tincture of Iron, Athenstædt, Compound. (Aromatic Tincture of Iron.—Athenstædt's Tincture.)

Soluble oxide of iron gr. 330
 Distilled water. fl.oz. 19
 Simple syrup fl.oz. 6
 Alcohol fl.oz. $6\frac{1}{2}$
 Citric acid. gr. 30
 Tincture of orange peel. m. 50
 Aromatic tincture. drops 12
 Tincture of cinnamon. drops 12
 Tincture of vanilla. drops 12
 Acetic ether. drop 1

Dissolve the iron salt in the water, then add the other ingredients and filter.

The iron oxide used for the above should represent 10 per cent of metallic iron. If it be weaker, a proportionately larger amount should be employed, and slightly decreasing the amount of syrup subsequently added.

Tincture of Iron Acetate, Rademacher's.

Iron sulphate, pure gr. 656
 Lead acetate, pure. gr. 684
 Diluted acetic acid. fl.oz. 6
 Distilled water. fl.oz. 3
 Alcohol fl.oz. 6

Triturate the two salts together to a pasty mass, introduce this into an iron vessel, add the water and acid, heat to boiling, allow to cool, transfer to a large flask, add the alcohol, set the flask, loosely stoppered, aside for several months, agitating occasionally until the liquid has acquired a light red tint, and finally filter.

A more expeditious process for making this preparation would be by the use of solution of iron tersulphate, as follows:

Solution of iron tersulphate. fl.oz. $2\frac{1}{2}$
 Distilled water. fl.oz. $2\frac{1}{2}$
 Lead acetate, pure. av.oz. $1\frac{1}{4}$
 Diluted acetic acid. fl.oz. 5
 Alcohol fl.oz. 5

Dissolve the lead acetate in the acid, add the iron solution previously mixed with the water, then gradually add the alcohol, set aside for one or two weeks and decant the clear liquid which is the finished product.

Tincture of Jaborandi.

Jaborandi, powder. av.oz. 4
 Diluted alcohol. sufficient

Extract by percolation so as to obtain 16 fluidounces of product.—Brit. Pharm.

Tincture of Kalmia. (Tincture of Sheep Laurel or Mountain Mint.)

Sheep laurel leaves, ground. av.oz. $3\frac{1}{4}$
 Diluted alcohol. sufficient

Extract the drug by percolation so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Lobelia, Compound.

(King's Expectorant Tincture.)

Lobelia (herb). gr. 120
 Bloodroot. gr. 120
 Skunk cabbage. gr. 120
 Canada snake root. gr. 120
 Pleurisy root. gr. 120
 Water,
 Alcohol. of each, sufficient

Mix the drugs and reduce to fine powder; mix the alcohol and water in the proportion of 8 of the former to 1 of the latter, and

extract the mixed drugs by percolation with this menstruum so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Lemon Peel.

Lemon peel, fresh, sliced thin...av.oz. 2
Diluted alcohol.....sufficient

Mix the peel with 16 fluidounces of diluted alcohol, macerate for 7 days, agitating occasionally; strain, express and filter, adding enough menstruum to make a total filtrate of 16 fluidounces.—Brit. Pharm.

Tincture of Lobelia and Capsicum, Compound. (Antispasmodic Tincture.)

Lobeliaav.oz. 1
Capsicum.....av.oz. 1
Skunk cabbage.....av.oz. 1
Diluted alcohol.....sufficient

Mix the drugs in moderately fine powder and extract by percolation with diluted alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Lupulin.

Lupulinav.oz. 2½
Alcoholfl.oz. 16

Macerate for 7 days, shaking occasionally, and filter, adding enough alcohol through the filter to make 16 fluidounces.—Eclectic.

Tinctures, Mother.

The "mother tinctures" of the homeopaths are the basic preparations of crude drugs from which the attenuations or "potencies" are formed. They should be made from freshly gathered drug, which is to be contused and then macerated for 14 days with a mixture of alcohol and water in such proportion that the percentage of spirit in the product shall be the same as in the diluted alcohol, and the drug shall bear to the finished product the relation of 1 to 10, the former being calculated as dry drug. In other words a portion of the drug must first be dried, then bruise remainder to a pulp, add 5 times its weight (as dry drug) of alcohol and then enough water to make up twice the weight of the alcohol used, strain and express at the end of 14 days, add enough of diluted

alcohol through the strainer to make up the weight of drug and liquid just expressed, and finally filter the whole.

Inasmuch as fresh drugs are not generally obtainable, dry drugs are usually employed in their stead.

Mother tinctures may be conveniently prepared from ordinary tinctures by dilution with diluted alcohol.

Only distilled water should be used for homeopathic preparations; also the best alcohol should be used for these. Good "cologne spirit" is generally dispensed "homeopathic alcohol."

Tincture of Mugwort Root, Rademacher's. (Tincture of Artemisia.)

Mugwort root, cut fine.....av.oz. 3
Diluted alcohol.....fl.oz. 15

Mix, macerate for 3 days, express, and filter.

Tinctures, Normal.

The use of the term "normal" as applied to tinctures is confined to Eclectic pharmacy, and it signifies that the product, the "normal tincture," represents the dry drug, weight for weight. They may be prepared from fresh or from dry drugs or by the use of a greater or less proportion of alcohol in the menstruum, but the strength of the product is always based upon the drug in a dry condition. Good fluid extracts may always be dispensed in place of the corresponding "normal tinctures."

Normal tinctures are designated by Eclectics for brevity's sake, as "tinctures ($\frac{p}{q}$)."

Tinctures one-half the strength of normal tinctures are called semi-normal ($\frac{p}{2}$); one-fifth as quinti-normal ($\frac{p}{5}$); one-tenth as decinormal ($\frac{p}{10}$), etc.

Tincture of Nux Vomica, Rademacher's. (Tinctura Nucum Vomitarum.—Tinctura Strychni.)

The Rademacher tincture is to be prepared from grated or rasped nux vomica by maceration with diluted alcohol. Inasmuch as it is approximately of the same relative strength as the preparation of the U. S. P., the latter should always be dispensed for it.

Tincture of Opium, Ammoniated.

Opium.....	gr. 80
Spanish saffron.....	gr. 144
Benzoic acid.....	gr. 144
Oil of anise.....	m. 50
Stronger water of ammonia.....	fl.oz. 3¼
Alcohol.....	sufficient

Mix the first five ingredients with 18 fluidounces of alcohol, macerate for 7 days, agitating occasionally, express, filter, and add enough alcohol to the filtrate to make 16 fluidounces.—Brit. Pharm.

Tincture of Opium, Benzoated.

(Anisated Tincture of Opium.—Compound Tincture of Camphor.)

These are various terms used to designate paregoric or camphorated tincture of opium.

A rapid process for making this preparation is as follows:

Tincture of opium.....	fl.dr. 5
Spirit of camphor.....	fl.dr. 5
Oil of anise.....	fl.dr. ½
Benzoic acid.....	gr. 80
Diluted alcohol, enough to make.....	fl.oz. 16

Mix, dissolve, and filter.

Tincture of Opium Compound.

Tincture of opium.....	fl.oz. 3
Tincture of capsicum.....	fl.oz. 3
Spirit of camphor.....	fl.oz. 8
Chloroform.....	fl.dr. 9
Alcohol, enough to make.....	fl.oz. 15

Tincture of Opium, Crocated.

(Tinctura Opii Crocata.—Tincture of Opium and Saffron.—Sydenham's Laudanum.—Compound Wine of Opium.)

Opium, powder.....	av.oz. 1½
Spanish saffron.....	av.oz. ½
Cloves, bruised.....	gr. 90
Cassia bark, coarse powder.....	gr. 90
Alcohol.....	fl.oz. 6¾
Water.....	fl.oz. 9¼

Mix all, macerate for 7 days, agitating occasionally, and filter.—Germ. Pharm.

Tincture of Phosphorus, Compound.

Phosphorus.....	gr. 8
Chloroform.....	fl.dr. 14
Alcohol, enough to make.....	fl.oz. 10

Place the phosphorus in a stoppered bottle, apply the heat of a water bath until

dissolved, and then add the alcohol, then shake well.

This tincture should be protected from the light, in accurately stoppered bottles.

Each fluidram contains ¼ grain of phosphorus.—Brit. Pharm.

Tincture of Poison Oak. (Tincture of Poison Ivy.)

Fresh leaves of rhus toxicodendron.....	av.oz. 9
Alcohol.....	fl.oz. 6

Macerate for 14 days, express and filter in a well-covered funnel—Eclectic.

Tincture of Podophyllum.

Podophyllum, fine powder.....	av.oz. 3¼
Alcohol.....	sufficient

Extract the drug by percolation with alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Poke Root.

Poke root, fine powder.....	av.oz. 3¼
Diluted alcohol.....	sufficient

Extract the drug by percolation with diluted alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Poke Root, Compound.

Fluid extract of poke.....	fl.oz. 3
Fluid extract of cardamom.....	fl.dr. 1
Diluted alcohol, enough to make.....	fl.oz. 16

Mix and filter.

Tincture of Prickly Ash Berries.

Prickly ash berries, fine powder.....	av.oz. 4½
Diluted alcohol.....	sufficient

Extract the drug by percolation with diluted alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Pulsatilla.

Pulsatilla herb, fresh.....	av.oz. 8½
Absolute alcohol.....	sufficient

Cut the herb into small pieces and add absolute alcohol enough so that the product will measure 16 fluidounces; macerate for 14 days, express and filter.—Eclectic.

Tincture of Quinine.

Quinine sulphate.....	gr. 128
Tincture of bitter orange peel.....	fl.oz. 16

—Brit. Pharm.

Tincture of Quinine, Ammoniated.

Quinine sulphate.....gr. 128
Water of ammonia.....f.oz. 2
Diluted alcohol.....f.oz. 14

Dissolve the sulphate of quinine in the alcohol with aid of a gentle heat and add the ammonia.—Brit. Pharm.

Tincture of Quillaja. (Tincture of Soap Bark.)

Quillaja, coarse powder.....av.oz. 8¼
Alcohol.....f.oz. 5¼
Water.....sufficient

Boil the quillaja with 18 fluidounces of water for 15 minutes, strain, wash the residue on the strainer, with 1½ fluidounces of water, boil the strain liquid down to 10 fluidounces, allow to cool, add the alcohol, filter, and through the filtrate add enough water to make the filtrate measure 16 fluidounces.—U. S. P.

Tincture of Rhubarb, Compound.

Rhubarb.....gr. 884
Dogbane (apocynum androsaem).gr. 192
Golden seal.....gr. 192
Gentian.....gr. 192
Prickly ash berries.....gr. 192
Diluted alcohol.....sufficient

Mix the drugs, reduce to fine powder, and extract with diluted alcohol, by percolation so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Rhubarb, Koehltreuter's.

Rhubarb, cut fine.....av.oz. 2½
Bitter orange peel, cut fine.....gr. 860
Centaury, cut fine.....gr. 180
Fennel, crushed.....gr. 110
Distilled water.....f.oz. 9
Alcohol.....f.oz. 7½

Mix and macerate for 8 days, strain and filter.

Tincture of Saffron. (Tincture of Crocus.)

Saffron.....av.oz. 1¼
Diluted alcohol.....sufficient

Extract the drug by percolation so as to obtain 16 fluidounces of product.—U. S. P.

Tincture of Savin.

Savin, coarse powder.....av.oz. 2
Diluted alcohol.....sufficient

Extract the drug by percolation so as to obtain 16 fluidounces of tincture.—Brit. Pharm.

Tincture of Savin, Compound.

Fluid extract of savin.....f.oz. 1
Tincture of castor.....f.oz. 7½
Tincture of myrrh.....f.oz. 7½

Tincture of Senna, Compound. (Elixir Salutis.—Elixir of Health.)

Alexandria senna, cut.....gr. 480
Jalap, finely powdered.....gr. 240
Coriander.....gr. 120
Raisins, deprived of seeds.....av.oz. 1½
Diluted alcohol.....f.oz. 16

Macerate for 7 days, shaking occasionally, and filter.—Eclectic.

Tincture of Serpentaria, Compound. (Sudorific Tincture.)

Serpentaria.....gr. 160
Ipecac.....gr. 160
Spanish saffron.....gr. 160
Camphor.....gr. 160
Opium.....gr. 160
Diluted alcohol.....f.oz. 16

Macerate the finely powdered drugs with the diluted alcohol for 7 days, agitating occasionally, and filter.—Eclectic.

Tincture of Shepherd's Purse, Rademacher's. (Tinctura Bursæ Pastoris.)

Shepherd's purse herb, freshly gathered.....av.oz. 10
Alcohol.....f.oz. 12

Contuse the herb to pulp, add the alcohol, macerate for 7 days, express and filter.

Tincture of Skunk Cabbage.

Skunk cabbage, recently dried.....av.oz. 8¼
Diluted alcohol.....sufficient

Extract the drug in fine powder by percolation with diluted alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Stavesacre.

Stavesacre seed, fine powder.....av.oz. 11
Absolute alcohol.....sufficient

Percolate the drug with the absolute alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Stillingia.

Stillingia, fine powder.....av.oz. 8
Diluted alcohol.....sufficient

Extract the drug by percolation with diluted alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Strychnine.

Strychnine (alkaloid).....gr. 12
 Alcoholfl.oz. 4

Agitate occasionally until dissolved.—Brit. Pharm.

Tincture of Strychnine, Compound.

Strychnine (alkaloid).....gr. 16
 Acetic acidfl.dr. 4
 Compound tincture of carda-
 mom.....fl.dr. 4
 Waterfl.oz. 7½
 Alcoholfl.oz. 7½

Dissolve the strychnine in the alcohol and acetic acid, add the remaining ingredients, and filter.—Eclectic.

Tincture of Sulphur.

Washed sulphur.....290
 Absolute alcohol.....fl.oz. 16

Mix, macerate for 4 days, agitating occasionally, and filter.—H.

Tincture of Sulphur, Homeopathic.

Washed sulphur.....av.oz. 1½
 Alcoholfl.oz. 16

Mix, macerate for 8 days, shaking twice a day, decanting the clear liquid, and filtering. This is considered equal to the first centesimal potency.

Tincture of Tolu.

Tolu.....av.oz. 1¼
 Alcohol, enough to makefl.oz. 16

Mix, agitate occasionally until dissolved, and filter.—U. S. P.

Tincture of Valerian, Ethereal.

Valerian powderav.oz. 2½
 Spirit of ether.....sufficient

Mix the drug with 15 fluidounces of spirit, macerate for 7 days, agitating occasionally, express, add enough spirit of ether to make 15 fluidounces, and filter in a closely covered funnel.—Germ. Pharm.

Tincture of Wahoo. (Tincture of Eonymus.)

Wahoo bark, powder.....av.oz. 8¼
 Alcoholsufficient

Extract the drug by percolation so as to obtain 16 fluidounces of product.—Brit. Form.

Tincture of Water Pepper.

Water-pepperav.oz. 4½
 Diluted alcohol.....sufficient

Extract the powdered drug by percolation with diluted alcohol so as to obtain 16 fluidounces of product.—Eclectic.

Tincture of Witch Hazel Bark.

Hamamelis bark, No. 20 powderav.oz. 1¼
 Diluted alcohol, enough to make.fl.oz. 16

Extract the drug by percolation.—Brit. Form.

Tincture of Wormwood. (Tincture of Absinthium.)

Wormwoodav.oz. 8
 Waterfl.oz. 8½
 Alcoholfl.oz. 12½

Mix, macerate for 7 days, agitating occasionally, express, and filter —Germ. Pharm.

This may also be prepared by extracting the powdered drug by percolation.

Tincture of Wormwood, Compound. (Bitter Stomach Drops.)

Wormwoodgr. 520
 Blessed thistlegr. 180
 Galangal root.....gr. 180
 Orange berries.....gr. 180
 Diluted alcohol.....sufficient

Mix the drugs, reduce to powder, and extract by percolation with diluted alcohol so as to obtain 16 fluidounces of product..

Tisanes.

This is the French appellation for the class of preparations known to us as "infusions."

Transfusion Fluid.**A. (Billroth's.)**

Sodium phosphate.....gr. 8
 Sodium carbonate.....gr. 20
 Ammonium carbonate.....gr. 20
 Sodium chloride.....gr. 60
 Alcoholm. 160
 Distilled water, enough to
 makefl.oz. 20

B. (Little's.)

Sodium phosphate.....gr. 8
 Potassium chloride.....gr. 6
 Sodium carbonate.....gr. 40
 Sodium chloride.....gr. 60
 Distilled water, enough to make.fl.oz. 20

C. (Weber's.)

Sodium bicarbonate.....	gr. 6
Calcium chloride.....	gr. 6
Potassium chloride.....	gr. 6
Sodium chloride.....	gr. 480
Distilled water, enough to make	fl.oz. 8

For use, dilute 1 fluidounce of this solution with water at 50 degrees C., so as to make 16 fluidounces.

Turpentine, Canada.

This is Balsam of Fir.

Turpentine Venice, Factitious.

Gum turpentine	av.oz. 10
White resin.....	av.oz. 8
Oil of turpentine	fl.oz. 10

Melt the resin, add the turpentine, allow it to melt, then add the oil, and strain.

Vinegar of Bloodroot. (Vinegar of Sanguinaria.)

Bloodroot, powder.....	av.oz. 1¼
Diluted acetic acid.....	sufficient

Extract the drug by percolation so as to obtain 16 fluidounces of product.—U. S. P. 1880 and N. F.

Vinegar of Cantharides.

Cantharides, powder.....	gr. 700
Glacial acetic acid	fl.dr. 18
Acetic acid	sufficient

Mix 10 fluidounces of acetic acid with the glacial acid, add the drug, maintain at a temperature of 94 degrees C., for 2 hours, allow to cool, and transfer to a percolate; after the liquid has drained off, add enough acetic acid through the percolator to make the liquid measure 16 fluidounces.—Brit. Pharm.

Vinegar of Ipecac.

Ipecac in No. 20 powder.....	gr. 360
Diluted acetic acid, enough to make.....	fl.oz. 16

Extract the drug by percolation.—Brit. Pharm.

Vinegar of Lobelia.

Lobelia, powder.....	av.oz. 1¼
Diluted acetic acid.....	sufficient

Extract the drug by percolation so as to obtain 16 fluidounces of product.—U. S. P. 1880 and N. F.

Vinegar of Sabadilla.

Sabadilla, powder.....	av.oz. 1¼
Diluted acetic acid	fl.oz. 14
Alcohol	fl.oz. 2

Macerate for 7 days, then filter.

This preparation is useful for the extermination of vermin upon the body.

Vinegar, White Wine, Imitation.

Acetic acid.....	fl.oz. 16
Tartaric acid.....	av.oz. 1
Acetic ether.....	fl.dr. 4
White wine.....	fl.oz. 16
Water	fl.oz. 82

Water, Acorn, Rademacher's. (Aqua Glandium.—Aqua Quercus.)

Acorns, deprived of the hard outer hulls, in coarse powder	av.oz. 9¼
Alcohol	fl.oz. 8
Water	fl.oz. 82

Mix, macerate for 24 hours, and then distill off 16 fluidounces.

Water, Bromine.

Bromine	drops 4
Distilled water.....	fl.oz. 1

—H.

Water, Caraway.

Mix 1¼ av. ounces of bruised caraway seed with 32 fluidounces of water and distill off 16 fluidounces.—Brit. Pharm.

A quicker process is to triturate 15 drops of oil of caraway with ¼ av. ounce of purified talcum until well mixed, then add 16 fluidounces of distilled water, macerate for 6 hours, and filter.

Water, Carbolized.**I.**

Glycerite of carbolic acid, U. S. P. 1870.....	fl.oz. 1¼
Water	fl.oz. 16

—U. S. P. 1870.

If it is not desired to keep the glycerite on hand, the above may be prepared (approximately) from 2 fluidrams of carbolic acid in the fluid form; as it is usually kept on hand by pharmacists for dispensing purposes; 1 fluidounce of glycerin, and enough water to make 16 fluidounces.

II.

Carbolic acid, liquefied	fl.dr. 4
Distilled water.....	fl.oz. 14½

—Germ. and Austr. Pharm.

Water, Carminative. (Aqua Carminativa.
—Wind Wasser.)

Oil of orange.....	drops	7
Oil of caraway.....	drops	7
Oil of lemon.....	drops	7
Oil of fennel.....	drops	7
Oil of coriander.....	drops	7
Oil of spearmint.....	drops	7
Alcohol.....	fl.oz.	2
Chamomile water.....	fl.oz.	14

Mix the oils with the alcohol, add the water and filter.—H.

Water, Castor, Rademacher's. (Aqua
Castoreum.)

Canadian castor, cut fine.....	av.oz.	2½
Alcohol.....	fl.oz.	3
Water.....	fl.oz.	32

Mix, macerate for 12 hours, and distill off 16 fluidounces.

Water, Chamomile.

Chamomile.....	av.oz.	1½
Water.....	fl.oz.	48

Mix, macerate for 24 hours, and distill off 16 fluidounces.—Austr. Pharm..

A quicker process is to triturate 15 drops of oil of chamomile with ½ av. ounce of purified talcum until well mixed, then add 16 fluidounces of distilled water, macerate for 6 hours, and filter.

Water, Cherry. (Aqua Cerasorum Nigro-
rum.)

Bitter almond water.....	fl.dr.	7
Distilled water, enough to make	fl.oz.	16

Water, Chlorine.

A rapid process and one that is entirely satisfactory is as follows:

Potassium chlorate.....	gr.	40
Hydrochloric acid, C. P.....	fl.dr.	3½
Distilled water, enough to make	fl.oz.	16

Mix the salt with the acid in a bottle and when vapors begin to be evolved add 1 fluidounce of water, stopper the bottle, shake well until the crystals are dissolved, and then add the remainder of the water.

Water, Crystal. (Aqua Crystallina.)

Potassium bitartrate.....	gr.	120
Sugar.....	av.oz.	1
Water.....	fl.oz.	15

Mix, dissolve and filter. This is a pleasant beverage for use in febrile disease.

Water, Dill. (Aqua Anethi.)

Dill fruit (seed).....	av.oz.	1½
Water.....	fl.oz.	32

Mix and distill off 16 fluidounces.—Brit. Pharm.

This may be prepared by triturating 15 drops of oil of dill with ½ av. ounce of purified talcum until well mixed, add 16 fluidounces of distilled water, macerate for 6 hours, and filter.

Water, Linden.

Linden flowers, dry.....	av.oz.	½
Water.....	fl.oz.	32

Mix and distill off 16 fluidounces.

Linden flowers are derived from our common basswood tree. Instead of one-half ounce of the dry leaves, 2½ ounces of the fresh leaves may be employed.—D. modified.

Water, Nux Vomica, Rademacher's.

(Aqua Nucum Vomifarum.—Aqua Strychni Seminis.)

Nux vomica, cut into small pieces.....	av.oz.	10
Alcohol.....	fl.oz.	2
Water.....	fl.oz.	32

Mix, macerate for 24 hours and distill off 16 fluidounces.

Water, Pimento.

Pimento, bruised.....	av.oz.	1½
Water.....	fl.oz.	32

Mix and distill off 16 fluidounces.—Brit. Pharm.

It may also be prepared by triturating 15 drops of oil of pimento with ¼ av. ounce of purified talcum until well mixed, adding 16 fluidounces of water, macerating for 6 hours and filtering.

Water, Quassia, Rademacher's.

Quassia bark.....	av.oz.	1½
Quassia wood.....	av.oz.	6
Alcohol.....	fl.oz.	2
Water.....	fl.oz.	32

Mix, macerate for 24 hours, and distill off 16 fluidounces.

Water, Tar.

See Infusion of Tar.

Water, Tobacco, Rademacher's.

(Aqua Nicotianæ.)

Tobacco leaves, freshly gatheredav.oz. 16
Alcoholfl.oz. 4
Waterfl.oz. 64

* Concise the leaves, bruise in a mortar, add the alcohol and water, macerate for 12 hours, and then distill off 16 fluidounces.

Water, Tolu.

Tincture of tolu.fl.dr. 1
Magnesium carbonategr. 60
Waterfl.oz. 16

Triturate the tincture with the magnesium carbonate until well mixed, add the water gradually with stirring, and filter.

This is used to some extent in lieu of distilled water for making mucilage of acacia.

Wax, Yellow, Filtered.

Yellow waxav.oz. 16
Sodium sulphate, dried, in fine powder,gr. 350

Melt the wax at the lowest possible temperature, add the sodium sulphate, maintain the wax at the same temperature for 4 hours, stirring frequently, and filter by hot filtration.

This is an excellent product suitable for white ointments and cerates provided the temperature employed in preparation was not too high.—D.

Wine of Aloes.

Purified aloesav.oz. 1
Cardamomgr. 75
Gingergr. 75
Alcohol,
White wineof each, sufficient

Mix the three drugs, reduce to coarse powder, add 2 fluidounces of alcohol and 14 of wine, macerate for 7 days, agitating occasionally, and filter; add through the filter enough of a mixture of one part of alcohol to 7 of wine by volume to make the filtrate measure 16 fluidounces.—U. S. P. 1880.

Wine of Beef and Iron. (Beef, Wine and Iron.)

Extract of beefgr. 256
Tincture of citro-chloride of ironfl.dr. 4½
Water, hotfl.oz. 1
Sherry wine, enough to make. .fl.oz. 16

Pour the hot water on the extract of beef

contained in a mortar or other suitable vessel, and triturate until a smooth mixture results. Then gradually add, while stirring, 12 fluidounces of sherry wine. Next add the tincture and the remainder of the wine. Transfer the mixture to a bottle, set this aside for a few days in a cold place, if convenient, filter, and pass enough sherry wine through the filter to restore the original volume.

Wine of Beef, Iron and Cinchona.

(Beef, Wine, Iron and Cinchona.)

Extract of beefgr. 256
Tincture of citro-chloride of ironfl.dr. 4½
Quinine sulphategr. 16
Cinchonidine sulphategr. 8
Citric acidgr. 6
Water, hotfl.oz. 1
Angelica wine, enough to make. fl.oz. 16

Dissolve the citric acid and the quinine and cinchonidine sulphates in the hot water, and pour the solution upon the extract of beef contained in a mortar or other suitable vessel. Triturate the liquid with the extract, until they form a smooth mixture, then gradually add, while stirring, 12 fluidounces of angelica wine, and afterwards the tincture of citro-chloride of iron. Transfer the mixture to a bottle, set this aside for a few days in a cold place, if convenient; filter, and pass the remainder of the angelica wine.

Wine of Beef, Iron and Coca.

Extract of beefgr. 256
Tincture of citro-chloride of iron. .m. 256
Water, hotfl.oz. 1
Simple syrupfl.oz. 1
Fluid extract of cocafl.dr. 10½
Sherry wine, enough to make. .fl.oz. 16

Triturate the extract of beef with the water until dissolved, add 10 fluidounces of wine, then the tincture, syrup, fluid extract, and the remainder of the wine, and filter.

Each ½ fluidounce represents 8 gr. of beef extract, 8 m. of tincture of iron, and 20 m. of coca.

Wine of Cinchona.

Yellow cinchona, coarse powder. .av.oz. ¾
Port winefl.oz. 16

Macerate for 8 days and then filter.—

Germ. Pharm.

Wine of Cinchona, Compound.

Yellow cinchona.....	av.oz.	1 3/4
Bitter orange peel.....	gr.	75
Chamomile.....	gr.	75
Alcohol.....	fl.oz.	4 1/2
White wine.....	fl.oz.	18

Bruise the drugs, macerate in the mixed alcohol and wine for 10 days, agitating occasionally, and filter.—Codex.

Wine of Cinchona and Cacao.

Fluid extract of yellow cinchona.....	fl.oz.	1
Tincture of cacao.....	fl.oz.	1
Simple syrup.....	fl.oz.	2
Angelica wine.....	fl.oz.	12

Mix and filter, if necessary.

Wine of Cinchona and Coca.

Fluid extract of coca.....	fl.oz.	1
Wine of cinchona and cacao.....	fl.oz.	15

Wine of Cod Liver Oil.

Gaduol.....	gr.	64
Alcohol.....	fl.dr.	4
Simple syrup.....	fl.oz.	2
Fuller's earth.....	gr.	240
Port wine.....	enough to make fl.oz.	16

Mix the gaduol with the alcohol, and add the fuller's earth, rub well together, and then add the syrup and 18 fluidounces of wine, let stand a day or two, shaking occasionally, then filter, passing the remainder of the wine through the filter.

A preparation of the same character but of a more distinctive taste and appearance may be compounded as follows:

Gaduol.....	gr.	64
Alcohol.....	fl.dr.	4
Fuller's earth.....	gr.	240
Port wine, claret wine, equal parts of each, enough to make fl.oz.		16

Proceed as before.

Compounds prepared as above contain 25 per cent of the active medicinal principles of cod liver oil.

Wine of Columbo.

Columbo, coarse powder.....	av.oz.	1
Red wine.....	fl.oz.	16

Mix, macerate for 10 days, agitating occasionally, express, and filter.—Codex.

Wine of Creosote.

Glycerite.....	fl.oz.	4
Simple syrup.....	fl.oz.	2 1/2
Water.....	fl.oz.	4
White wine.....	fl.oz.	5 1/2

This contains 2 1/2 per cent of creosote.

Wine of Creosote, Compound.

Creosote.....	fl.dr.	2
Alcohol.....	fl.dr.	4
Tincture of gentian.....	fl.oz.	5
Sherry wine.....	enough to make fl.oz.	16

Wine of Damiana. (Wine of Turnera.)

Fluid extract of damiana.....	fl.oz.	3
Simple elixir.....	fl.oz.	3
Sherry wine.....	fl.oz.	10

Mix and filter, if necessary.

Wine, Diuretic, Hufeland's.

Fluid extract of bryony.....	fl.oz.	1
Sherry wine.....	fl.oz.	11

Wine of Elder Bark. (Hydragogue Tincture.)

Elder bark.....	gr.	480
Parsley root.....	gr.	480
Sherry wine.....	sufficient	

Extract the mixed drugs by percolation with the wine so as to obtain 16 fluidounces of product.—Eclectic.

Wine of Golden Seal, Compound.

(Wine Bitters.)

Golden seal.....	gr.	20
Tulip tree bark.....	gr.	20
Bitter root (dogsbane).....	gr.	20
Prickley ash berries.....	gr.	10
Sassafras bark.....	gr.	10
Capsicum.....	gr.	10
Sherry wine.....	sufficient	

Extract the mixed drugs in coarse powder by percolation with the wine so as to obtain 16 fluidounces of product.—Eclectic.

Wine of Iron, Bitter.

Iron and quinine citrate, soluble.....	gr.	360
Tincture of sweet orange peel.....	fl.oz.	2 1/2
Simple syrup.....	fl.oz.	5
White wine.....	enough to make fl.oz.	16

Dissolve the iron and quinine citrate in 8 fluidounces of wine, add to this the tincture, syrup, and remainder of the wine, set aside for several days, and filter.—U. S. P.

Wine of Kola.

Elixir of kola fl.oz. 8
 Claret wine..... fl.oz. 8
 Mix; let stand for 24 hours, and filter.

Wine of Iron, Sweet.

Cinchona, powder..... gr. 60
 Bitter orange peel, powder..... gr. 30
 Citric acid..... gr. 30
 Citrate of iron, soluble..... gr. 120
 Water fl.oz. $3\frac{1}{2}$
 Sherry wine..... fl.oz. 7
 Tincture of sweet orange peel. fl.oz. $8\frac{1}{2}$
 Simple syrup..... fl.dr. 14

Mix the tincture with the water and with this percolate the mixed cinchona and orange peel, adding enough more of the same menstruum to make 7 fluidounces, add to this the citric acid and iron salt dissolved in the wine, then add the syrup and filter.

Wine of Iron and Quinine Citrate.

Citrate of iron and quinine..... gr. 48
 Water, hot..... fl.oz. 2
 Syrup of lemon..... fl.oz. 2
 Sherry wine..... enough to make fl.oz. 16

Dissolve the iron and quinine citrate in the water, add the other ingredients, and filter if necessary.

Wine of Iron and Potassium Tartrate.

Tartrate of iron and potassium. gr. 160
 Water, hot fl.dr. 4
 Water of ammonia..... sufficient
 Angelica wine, enough to make fl.oz. 16

Dissolve the salt in the water, carefully neutralize the acid in the wine with ammonia, mix the two liquids, and filter.

Wine of Licorice with Opium.

(Vinum Liquiritiæ Thebaicum.)

Opium powder..... gr. 145
 Spanish saffron, coarsely powdered..... gr. 145
 Extract of licorice, powder..... gr. 145
 Malaga wine..... sufficient

Macerate the drugs for 5 days with 16 fluidounces of wine, and filter, adding enough wine through the filter to make 16 fluidounces.

The product contains 2 per cent of each of the drugs.

Wine of Coca.

Elixir of coca..... fl.oz. 8
 Claret wine..... fl.oz. 8
 Mix; let stand for 24 hours, and filter.

Wine of Iron Citrate.

Iron citrate, soluble gr. 288
 Tincture of sweet orange peel. fl.oz. $2\frac{1}{2}$
 Simple syrup..... fl.oz. 13
 White wine..... enough to make fl.oz. 16

Dissolve the iron salt in 12 fluidounces of wine, to this add the tincture, syrup, and remainder of the wine, set the mixture aside for several days, and filter.—U. S. P.

Wine of Orange.

Oil of orange m. 5
 Alcohol fl.dr. 4
 Magnesium carbonate gr. 240
 Simple syrup..... fl.oz. 2
 Sherry wine..... fl.oz. $18\frac{1}{2}$

Dissolve the oil in the alcohol, triturate with the magnesium carbonate, add the other ingredients and filter.

Wine of Pancreatin.

Pancreatin, pure gr. 160
 Simple elixir..... fl.oz. 5
 Sherry wine..... fl.oz. 11

Macerate the pancreatin in the elixir for 24 hours, then add the wine and filter.

Wine of Quinine.

Quinine sulphate..... gr. 16
 Citric acid..... gr. 24
 Orange wine..... fl.oz. 16

Mix, let stand for 3 days, agitating occasionally, and filter.—Brit. Pharm.

Wine of Wafer Ash. (Wine of Ptelea.)

Wafer ash, powder..... av.oz. $2\frac{1}{2}$
 White wine..... sufficient

Extract the drug by percolation so as to obtain 16 fluidounces of product.

Wine of Wormwood. (Wine of Absinthium.)

Wormwood, cut..... av.oz. $\frac{1}{2}$
 Alcohol fl.oz. 1
 Sherry wine fl.oz. 16

Mix, macerate for 7 days, agitating occasionally, and filter.—Codex.

PART II.

HOUSEHOLD REMEDIES.

While this part of the work is not intended in any sense as a treatise upon the manufacture of proprietary medicines, it is proposed to impart to the pharmacist such information as he requires in preparing remedies for ordinary ailments, for popular use and sale, and thereby to replace "patent" medicines. These remedies may be offered by the pharmacist for sale under his own name or that of a pseudonym, if the latter be preferred.

Ague Cures.

Remedies for the relief and cure of fever, ague, and chills, or, more properly, malaria, are not of such frequent use as they were some years ago; however, there is still a demand in some sections, and the pharmacist must be prepared to supply the want. Most of these remedies are made to contain cinchona or one or more of its alkaloids, sometimes also arsenic and frequently some iron or a cathartic.

These preparations may assume the form of liquid or pills, or even some other form, but the two mentioned are the most common. They may be entitled "Peruvian Ague Cure," "Ague Tonic," "Ague Tonic Syrup," "Ague Tonic Cure," "Chill Cure," "Chill Tonic," "Ague Pills," "Anti-Chill Pills," "Cholagogue," "Ague Remedy," "Ague Bitters," "Ague Specific," "Fever and Ague Tonic," "Febrifuge," "Ague Specific," etc.

I.

Tincture of eucalyptus (1 in 10) fl.oz. 2
Tincture of serpentaria.....fl.oz. 4
Tincture of capsicum.....fl.dr. 5
Tincture of myrrh.....fl.dr. 5
Tincture of nux vomica.....fl.dr. 2
Quinine sulphate.....gr. 60
Elixir of licorice, enough to make fl.oz. 16

II.

Cinchonidine sulphate.....av.oz. 2½
Aromatic sulphuric acid.....fl.oz. 1
Tincture of chloride of iron.....fl.oz. 3
Tincture of nux vomica.....fl.oz. 2
Syrup of ginger, enough to make fl.oz. 64

III.

Quinidine sulphate.....av.oz. 2
Solution of arsenous acid.....fl.dr. 4
Fluid extract of senna.....fl.oz. 1
Syrup of licorice enough to make fl.oz. 64

Owing to the absence from the above of the bitter taste of quinine, cinchonidine or cinchona bark, it may be termed "Tasteless Chill Cure," "Tasteless Ague Tonic," or "Tasteless Chill Tonic."

IV.

Tincture of valerian.....fl.oz. 4½
Tincture of cinchona.....fl.oz. 4½
Elixir of licorice, enough to make fl.oz. 64

V.

Fluid extract of cinchona.....fl.oz. 6
Aromatic sulphuric acid.....fl.oz. 2
Tincture of ginger.....fl.oz. 3
Fluid extract of cloves.....fl.oz. 1
Fluid extract of rhubarb.....fl.dr. 4
Fluid extract of cinnamon.....fl.dr. 4
Fluid extract of podophyllum.....fl.dr. 1
Alcohol.....fl.oz. 16
Simple syrup, enough to make fl.oz. 64

VI.

Cinchona, yellow, powder.....av.oz. 4
Cream of tartar.....av.oz. 4
Cloves, powder.....av.oz. ½

Dose: A teaspoonful every 3 hours.

This preparation has been termed "Dutch Ague Remedy."

VII.

Make pills, each containing
Chinoidine.....gr. 1
Iron ferrocyanide.....gr. 1
Oil of black pepper.....drop 1
Arsenous acid.....gr. 16

VIII.

Make pills, each containing
Cinchonidine sulphate.....gr. 3
Podophyllum.....gr. 16
Ginger.....gr. ½

Asthma Remedies.

The number of titles employed to designate asthma remedies is comparatively small; the following are appropriate: "Asthma Remedy," "Asthma Elixir," "Antasthmatic Powder," "Antasthmatic Remedy," "Asthma Cure," "Asthma Mixture," etc.

Asthma remedies are of about three kinds, one for internal administration, one for inhalation, and one to be ignited, the vapor to be inhaled. Favorite ingredients of the first kind are the alkali iodides, ammonium salts, grindelia, wild cherry, lobelia, belladonna, Hoffman's anodyne, etc.

The liquid preparations for inhalation contain amyl nitrite and oil of mustard. Asthma remedies to be used by ignition are usually composed of stramonium, potassium nitrate, belladonna, etc.

I.

Ammonium iodide	gr. 120
Tincture of lobelia	fl.dr. 2
Tincture of belladonna	fl.dr. 2
Fluid extract of grindelia ro-	
busta	fl.dr. 4
Fluid extract of licorice	fl.dr. 4
Syrup of tolu, enough to make	fl.oz. 4

Label: A teaspoonful three times a day.
Extra doses to be given during a paroxysm.

II.

Potassium iodide	gr. 160
Fluid extract of grindelia	fl.dr. 2½
Fluid extract of belladonna	fl.dr. ½
Tincture of gelsemium	m. 50
Water	fl.oz. 1
Simple elixir, enough to make	fl.oz. 4

Give one and a half teaspoonfuls every 2 or 3 hours. After about three doses are taken the difficulty of breathing will have disappeared.

III.

Ammonium bromide	gr. 120
Ammonium chloride	gr. 120
Tincture of lobelia	fl.dr. 8
Fluid extract of grindelia	fl.oz. 1
Compound spirit of ether	fl.oz. 1
Water	fl.oz. 1
Syrup of licorice, enough to	
make	fl.oz. 4

IV.

Stramonium	av.oz. 2
Cannabis indica	av.oz. 1
Lobelia	av.oz. 1
Eucalyptus	av.oz. 1
Tea	av.oz. 1
Aniseed	gr. 60
Potassium nitrate	av.oz. 1¼

Reduce all to powder and pass through a No. 80 sieve; then dry thoroughly. If the potassium nitrate be mixed with 3 ounces of water, and the vegetable powder be

moistened with the solution, and then thoroughly dried, it burns better; but if all the ingredients are well dried, and the niter is thoroughly mixed, this is not necessary.

V.

Potassium iodide	gr. 60
Sodium nitrite	gr. 60
Fluid extract of quebracho	fl.dr. 3
Fluid extract of coffee	fl.dr. 3
Fluid extract of sanguinaria	drops 15
Syrup of ipecac	fl.dr. 8
Chloroform water	fl.oz. 4

This is to be used like Nos. I, II, and III.

VI.

Tincture of stramonium	fl.dr. 2
Tincture of lobelia, ethereal	fl.dr. 1
Potassium nitrate	fl.dr. 1
Spirit of nitrous ether	fl.dr. 4
Aromatic tincture	fl.dr. 4
Chloroform water	fl.oz. 2

Directions: Two tablespoonfuls at bed time, and when difficult breathing comes on.

VII.

Ammonium iodide	gr. 120
Ammonium bromide	gr. 180
Syrup of tolu	fl.oz. 3
Tincture of lobelia	fl.oz. 5

Teaspoonful every 1, 2, 3 or 4 hours.

This is known as "Fothergill's Asthma Mixture."

VIII.

Hoffman's anodyne	fl.oz. 1
Syrup of tar	fl.oz. 1
Syrup of wild cherry	fl.oz. 2
Syrup of lactucarium	fl.oz. 2

Dose: A teaspoonful every 2 or 3 hours as needed.

IX.

Amyl nitrite	fl.dr. 2
Oil of mustard (essential)	drops 10
Ether	fl.dr. 4
Alcohol	fl.oz. 4

Put a few drops of the liquid upon some cotton or sponge and inhale from the latter.

X.

Fluid extract of grindelia ro-	
busta	fl.dr. 2
Potassium iodide	gr. 60
Tincture of opium	fl.dr. 2
Hoffman's anodyne	fl.dr. 4
Syrup of wild cherry, enough	
to make	fl.oz. 4

Dose: Two teaspoonfuls.

XI.

Stramonium leaves.....	av.oz. 1
Belladonna leaves.....	av.oz. 1
Saltpetre.....	gr. 72
Opium.....	gr. 80

Mix the drugs in powder. This is to be burned and the vapors inhaled.

XII.

Cubeb.....	av.oz. $\frac{1}{2}$
Digitalis.....	av.oz. $\frac{1}{2}$
Jaborandi.....	av.oz. 1
Stramonium.....	av.oz. 2
Potassium nitrate.....	av.oz. $1\frac{1}{2}$
Grindelia.....	av.oz. 1
Eucalyptus.....	av.oz. $\frac{1}{2}$
Cascarilla.....	gr. 60

Mix when perfectly dry, and burn from 1 to 2 drams, inhaling the fumes.

XIII.

Potassium nitrate.....	av.oz. $\frac{1}{2}$
Aniseed.....	av.oz. $\frac{1}{2}$
Stramonium.....	av.oz. 1

Mix all in powder, and use like the preceding.

XIV.

Stramonium, cut.....	av.oz. 10
Alcohol.....	fl.oz. 2
Potassium nitrate.....	av.oz. $1\frac{1}{2}$
Sodium nitrate.....	gr. 60
Potassium carbonate.....	gr. 8
Water.....	fl.oz. 16

Moisten the stramonium leaves with the alcohol, allow it to remain tightly packed in a well-covered vessel for 24 hours; dissolve the salts in the water, and impregnate the leaves with the solution; again pack them tightly as before, and allow to remain for 24 hours, then remove them and dry carefully.

XV.

The Paper of Potassium Nitrate of the U. S. P. may be used. It is prepared by immersing strips of white unsized paper in a solution of potassium nitrate in 4 parts of water, and then drying them.

In using they are to be ignited and the vapor inhaled.

XVI.

Cigarettes may be prepared from a mixture of equal parts of stramonium, lobelia, and belladonna herbs. These may be cut to a very fine condition, then rolled in suitable paper, and sealing the ends to prevent the drug from falling out by turning up the ends of the paper.

Barber's Itch, Remedies for.

I.

Resorcin.....	av.oz. 1
Glycerin.....	fl.oz. 1
Water.....	fl.oz. 1
Cologne.....	fl.dr. 4
Lac sulphur.....	av.oz. $1\frac{1}{2}$
Alcohol.....	fl.oz. 4

Apply several times daily.

II.

Shave off the hairs or cut them very short; then apply, once or twice a week, an ointment composed of:

Prepared chalk.....	av.oz. 1
Coal tar.....	gr. 45 to 180
Glycerin.....	fl.dr. 4
Simple cerate.....	av.oz. 5

III.

Shave the affected part closely every day and rub in this ointment twice daily:

Tannic acid.....	gr. 90
Lac sulphur.....	gr. 180
Zinc oxide.....	av.oz. 1
Starch.....	av.oz. 1
Petrolatum.....	av.oz. 2

IV.

During the inflammatory stage the following may be applied:

Ichthyol.....	gr. 20
Salicylic acid.....	gr. 10
Oleate of mercury, 10 per cent.....	gr. 120
Oil of lavender.....	drops 3
Lanolin.....	gr. 360

This to be kept constantly applied to the affected parts.

V.

Ichthyol.....	gr. 30
Salicylic acid.....	gr. 48
Mercury oleate.....	gr. 120
Zinc oxide.....	gr. 210
Starch.....	gr. 210
Petrolatum.....	gr. 420

VI.

Tannic acid.....	gr. 15
Sulphur, precipitated.....	gr. 80
Petrolatum.....	gr. 800

VII.

Other remedies may be found under the head of "Eczema Remedies," "Remedies for Itch," and "Ointments or Salves."

Bitters.

Suitable names for these preparations are "Wahoo Bitters," "Jaundice Bitters,"

"Stomach Bitters," "Hop Bitters," "Plantation Bitters," "American Plant Bitters," "Prickly Ash Bitters," "Tonic Bitters," "Iron Tonic Bitters," "Blood Bitters," "Liver Bitters," "German Bitters," "Spring Bitters," "Burdock Bitters," etc.

These preparations differ greatly from one another. All are stomachics and tonics; some are cathartics, others diuretics; some are also alterative.

Some "bitters" are simply disguised "drinks."

I.

Gentian	av.oz.	1 3/4
Bitter orange peel	gr.	240
Calamus	gr.	420
Tincture of citro-chloride of iron	fl.dr.	6
Alcohol,		
Water	of each,	sufficient
Syrupy glucose	fl.oz.	3 1/2

Extract the drug with a mixture of alcohol and water in the proportion of 1 of the former to 2 of the latter, to obtain 12 fluidounces of product, to which add the iron tincture and glucose.

II.

Aloes	av.oz.	6
Sassafras	av.oz.	8
Hops	av.oz.	2
Gentian	av.oz.	4
Chamomile	av.oz.	2
Acetic acid	av.oz.	1
Alcohol	fl.oz.	32
Water	enough to make gal.	1

Mix the acid and alcohol with 2 quarts of water, also mix the drugs, reduce to coarse powder, pack and macerate in a percolator, pass the previous mixture through it, and then enough hot water to make 1 gallon.

III.

Fluid extract of gentian	fl.oz.	1
Fluid extract of yellow cinchona	fl.oz.	1
Quinine sulphate	gr.	120
Iron citrate, soluble	av.oz.	2
Spirit of orange	fl.oz.	1
Simple syrup	fl.oz.	32
Water, hot	fl.oz.	8
Sherry wine	enough to make gal.	1

Dissolve the iron salt in the water, add the other ingredients, and filter.

IV.

Cascara sagrada	av.oz.	4
Dandelion	av.oz.	2
Gentian	av.oz.	4
German chamomile	av.oz.	2
Stillingia	av.oz.	2
Bitter orange peel	av.oz.	1
Cloves	gr.	180
Spirit of orange	fl.oz.	1
Sugar	av.oz.	16
Alcohol,		
Water	of each,	sufficient

Mix the seven drugs and reduce to moderately coarse powder, extract by percolation with a mixture of 1 part of alcohol to 3 of water so as to obtain 120 fluidounces of product. To this add the spirit of orange and the sugar; dissolve the latter by agitation.

V.

Wahoo bark	av.oz.	3 1/2
Gentian	av.oz.	1 1/2
Tamarack bark	av.oz.	1 1/2
Frasera	av.oz.	1 1/2
Dogwood bark	av.oz.	1
Golden seal	av.oz.	3
Canada snake root	av.oz.	1 1/2
Angelica root	av.oz.	2
Serpentaria	av.oz.	7
Prickly ash berries	av.oz.	1/2
Podophyllum	av.oz.	1
Canella bark	av.oz.	2
Buckthorn	av.oz.	1
Sugar	av.oz.	30
Alcohol,		
Water	of each,	sufficient

Mix the drugs, reduce to moderately coarse powder, and extract by percolation with a menstruum consisting of 1 part of alcohol to 8 of water by measure so as to obtain 112 fluidounces of percolate; in this dissolve the sugar by agitation or percolation.

VI.

Hops	av.oz.	4
Dandelion	av.oz.	4
Gentian	av.oz.	4
German chamomile	av.oz.	4
Stillingia	av.oz.	4
Sugar	av.oz.	32
Water,		
Alcohol	of each,	sufficient

Mix the drugs, reduce to coarse powder and extract by percolation so as to obtain 110 fluidounces of percolate, using a menstruum composed of 1 part of alcohol to 8 of water, by measure; in this percolate dissolve the sugar by agitation or percolation.

VII.

Sugar.....	av.oz. 6
Calamus root.....	av.oz. 6
Bitter orange peel.....	av.oz. 6
Peruvian bark.....	av.oz. 6
Gentian.....	av.oz. 6
Calumba.....	av.oz. $\frac{1}{2}$
Rhubarb.....	av.oz. 2
Cinnamon.....	av.oz. 1
Cloves.....	av.oz. $\frac{1}{2}$
Diluted alcohol.....	gal. 1

Reduce all the drugs to a coarse powder, and macerate two weeks with the menstruum; then strain, express and filter.

VIII.

Orange peel, ground.....	av.oz. 6
Gentian root, ground.....	av.oz. 4
Roman chamomile flowers.....	av.oz. 2
Rye whiskey.....	gal. 1

Macerate for 7 days, occasionally shaking the mixture; then express and filter through paper.

IX.

Gentian root, ground.....	av.oz. 2 $\frac{1}{2}$
Bitter orange peel.....	av.oz. 1 $\frac{1}{2}$
Canella, ground.....	av.oz. $\frac{3}{4}$
Cochineal, bruised.....	gr. 80
Alcohol.....	fl.oz. 16
Water.....	fl.oz. 16

Macerate for 7 days in a suitable vessel, occasionally agitating; express and filter through paper.

X.

Gentian.....	av.oz. 4
Peruvian bark.....	av.oz. 2
Roman chamomile flowers.....	av.oz. 1
Quassia.....	av.oz. $\frac{1}{2}$
Bitter orange peel.....	av.oz. $\frac{1}{2}$
Diluted alcohol.....	gal. 1

Mix the drugs, reduce to coarse powder, mix with the diluted alcohol, macerate for 7 days, agitating occasionally, then express and filter.

XI.

Orange berries.....	av.oz. 5
Orange peel, bitter.....	gr. 200
Calamus.....	gr. 100
Pimpinella.....	gr. 100
Hops.....	gr. 50
Simple syrup.....	fl.oz. 4
Diluted alcohol.....	sufficient

Mix the drugs, reduce to fine powder, extract by percolation with the diluted alcohol so as to obtain 124 fluidounces of product, and to this add the syrup.

Blood Purifiers.

These preparations may be put up under the names of "Sarsaparilla" "Sarsaparilla Syrup," "Compound Extract of Sarsaparilla," "Compound Sarsaparilla with Burdock and Iodide of Potassium," "Compound Syrup of Red Clover Blossoms," "Blood Purifying Tea," "Alterative Mixture," "Blood Cleanser," or whatever other title may be appropriate, or desirable.

The ingredients of this mixture are sarsaparilla, stillingia, burdock, yellow dock, red clover, any one or more of these combined, sometimes with potassium iodide, often with some laxative. Blood-purifying mixtures are in fact mainly cathartics.

Formerly all blood purifiers were prepared in the liquid form; latterly some are prepared in the form of "teas," or species. Examples of both kinds are given among the recipes that follow. The "teas" may be termed "Blood-Purifying Tea," "Sarsaparilla Tea," etc.

I.

Potassium iodide.....	gr. 240
Water.....	fl.oz. 2
Fluid extract of burdock.....	fl.oz. 2
Compound fluid extract of sarsaparilla.....	fl.oz. 8
Syrupy glucose, enough to make.....	fl.oz. 16

Mix. Dose, 1 to 4 teaspoonfuls, according to age.

II.

Buckthorn bark.....	av.oz. 20
Rochelle salt.....	av.oz. 8
Potassium bicarbonate.....	gr. 240
Sugar.....	av.oz. 24
Alcohol.....	fl.oz. 24
Spirit of lemon.....	fl.dr. 6
Tincture of ginger.....	fl.dr. 6
Oil anise.....	drops 15
Water.....	sufficient

With sufficient water make 6 pints of decoction from the buckthorn bark, which may be deprived of bitterness by the addition of calcined magnesia (see Bitterless Extract of Cascara Sagrada, Part I) and dissolve in it the Rochelle salt, potassium bicarbonate and sugar. After allowing to stand for some time, clarify by straining through flannel. Then mix the remaining ingredients and incorporate with the

decoction. The dose is from 1 to 2 table-spoonfuls morning and evening, some time after meals.

III.

Cream of tartar.....av.oz.	1
Potassium bicarbonate.....gr.	150
Fluid extract of podophyllum.....fl.dr.	1
Compound fluid extract of sarsaparilla.....fl.oz.	1½
Compound tincture of cardamom.....fl.dr.	2
Glycerin.....fl.oz.	2
Water.....enough to make fl.oz.	16

Dissolve the two potassium compounds in 8 fluidounces of water by the aid of a gentle heat, add the remaining ingredients, set aside for about 12 hours, and filter.

IV.

Sodium sulphovinate.....av.oz.	1
Compound syrup of sarsaparilla, fl.oz.	4
Fluid extract of dandelion.....fl.oz.	2
Syrup of orange.....fl.oz.	1½
Water, enough to make.....fl.oz.	16

Mix and filter.

V.

Sodium sulphate.....av.oz.	1
Water.....fl.oz.	4
Fluid extract of dandelion.....fl.oz.	1½
Fluid extract of senna.....fl.oz.	1

Essence of sarsaparilla (Part VI.).....fl.dr. 1
Syrupy glucose, enough to make.....fl.oz. 16

VI.

Rochelle salt.....av.oz.	1½
Compound fluid extract of sarsaparilla.....fl.oz.	1½
Fluid extract of dandelion.....fl.oz.	1½
Glycerin.....fl.oz.	2
Syrup.....fl.oz.	2
Spirit of wintergreen.....fl.dr.	1
Water, enough to make.....fl.oz.	16

VII.

Rochelle salt.....av.oz.	1½
Fluid extract of red clover tops.....fl.oz.	1
Fluid extract of sarsaparilla.....fl.oz.	1½
Fluid extract of dandelion.....fl.oz.	5
Compound syrup of sarsaparilla.....fl.oz.	1½
Syrup of wild cherry.....fl.oz.	1½
Water, enough to make.....fl.oz.	16

Mix and filter.

VIII.

Fluid extract of cascara sagrada.....fl.oz.	4
Glycerin.....fl.oz.	4
Syrup of ginger.....fl.oz.	4
Peppermint water.....fl.oz.	4
Sodium sulphite.....fl.dr.	1

Mix. Dose, from 1 to 1 tablespoonful as required.

IX.

Stillingia.....av.oz.	8
Sarsaparilla.....av.oz.	8
Burdock.....av.oz.	8
Blue flag.....av.oz.	1½
Podophyllum.....av.oz.	1½
Senna.....av.oz.	1½
Prickly ash bark.....gr.	860
Potassium iodide.....gr.	480
Diluted alcohol.....	sufficient

Mix the drugs, except the iodide, reduce to coarse powder, extract with diluted alcohol so as to obtain 1 gallon of percolate, and in this dissolve the potassium iodide.

X.

Sarsaparilla.....av.oz.	6
Burdock root.....av.oz.	3
Dandelion root.....av.oz.	3
Prickly ash bark.....av.oz.	3
Chamomile, Roman.....av.oz.	3
Sassafras bark.....av.oz.	4
Potassium iodide.....av.oz.	1
Sodium salicylate.....gr.	220
Glycerin.....fl.oz.	21
Alcohol.....fl.oz.	24
Water, enough to make.....gal.	1

Grind all the drugs to No. 20 powder. Mix the glycerin and alcohol with 2 quarts of water. Macerate 24 hours and percolate. When the liquid has ceased to drop, pour in hot water until a gallon altogether has been obtained. Add the potassium iodide and sodium salicylate and dissolve. If not sufficiently dark to suit the eye, add 1 fluidounce of caramel.

XI.

Sodium sulphate.....av.oz.	1
Water.....fl.oz.	2
Fluid extract of burdock.....fl.oz.	2
Fluid extract of senna.....fl.oz.	1
Compound syrup of sarsaparilla.....fl.oz.	8
Syrupy glucose, enough to make.....fl.oz.	16

XII.

Stillingia.....av.oz.	8
Blue flag.....av.oz.	2
Senna.....av.oz.	2
Prickly-ash bark.....av.oz.	2
Coriander seed.....av.oz.	1
Licorice.....av.oz.	8
Sassafras bark.....av.oz.	4
Yellow dock.....av.oz.	4
Potassium iodide.....av.oz.	2
Alcohol,	
Water.....of each,	sufficient

Mix the ground drugs, and moisten with menstruum (3 parts water, 1 part alcohol by

measure); pack in a percolator and allow to macerate for 48 hours, then percolate to 2½ pints; in this dissolve first the potassium iodide, and then, by cold percolation, 8 av. pounds of sugar.

XIII.

Sarsaparilla	av.oz.	6½
Stillingia	av.oz.	6½
Dandelion	av.oz.	8¼
Pipsissewa	av.oz.	8¼
Poke root	av.oz.	8¼
Senna	av.oz.	8¼
Licorice	av.oz.	8¼
Sodium sulphate	av.oz.	2
Sugar	av.oz.	48
Alcohol		
Water, enough to make	gal.	1

Mix the drugs, except sodium sulphate, reduce to coarse powder, percolate with a mixture of 1 of alcohol to 3 of water, until 100 fluidounces are obtained. In this dissolve the sugar and sodium sulphate.

XIV

Senna	av.oz.	20
Sugar	av.oz.	20
Fennel seed	av.oz.	10
Caraway seed	av.oz.	2
Juniper berries	av.oz.	6
Celery seed	av.oz.	4
Couch grass	av.oz.	4
Sassafras bark	av.oz.	4
Rochelle salt	av.oz.	8

All should be in coarse powder and should be well mixed. The mixture is a cathartic, alterative and diuretic.

XV.

Senna	av.oz.	10
Couch grass	av.oz.	1
Chicory	av.oz.	1
Juniper wood	av.oz.	1
Rest harrow root	av.oz.	1
Dandelion	av.oz.	1
Guaiac wood	av.oz.	1

Mix and make into a species.

This preparation is known as "Koeller's Blood-Purifying Tea."—H.

XVI.

Senna	av.oz.	8
Coriander	av.oz.	2
Manna	av.oz.	4
Cream of tartar	gr.	140

Make into a species.

XVII.

Aloes	av.oz.	5
Agaric	gr.	240
Gentian	gr.	240
Galangal	gr.	240
Rhubarb	gr.	240
Zedoary	gr.	240
Myrrh	gr.	240
Opium	gr.	2
Saffron	gr.	5
Cardamom	gr.	5
Cassia	gr.	5
Sugar	av.lbs.	8
Diluted alcohol	sufficient	

Macerate the ground drugs with 100 fluidounces of diluted alcohol for 7 days, agitating frequently, then filter, and in the filtrate dissolve the sugar by agitation.

This may be sold as "Blood-Purifying Drops." It resembles "elixir of long life" or "Swedish Bitters."

Bunion Cures.

The remedies recommended for the relief and cure of corns are usually also recommended for the removal of bunions. While these remedies often do afford relief, the two maladies are almost as distinct as they could possibly be. Corns are inflammations of the skin, whereas bunions are inflammations of the synovial membrane, which connects the great toe with the foot proper. Nothing less than a surgical operation will absolutely and permanently cure bunions.

Relief to bunions is often afforded as stated by the application of corn cures, assisted by frequent bathing in hot water. Frequently anointing with petrolatum, the application of tincture of iodine or of iodine ointment, or the wearing of a rubber protector will prove beneficial. A warm flaxseed meal poultice at night often eases a great deal.

Dr. Shoemaker, in his admirable work entitled "Heredity, Health and Personal Beauty," recommends the following paint:

Carbolic acid	fl.dr.	2
Tincture of iodine	fl.dr.	2
Glycerin	fl.dr.	2

To be applied with a camel's hair pencil every day. Copper oleate plaster is also advised by the same authority.

Burns and Scalds, Applications for.

- I.
 Solution of chloride of ironfl.dr. 4
 Petrolatumav.oz. 4
- II.
 Euophengr. 50
 Olive oilgr. 100
 Lanolinav.oz. 1
 Petrolatumav.oz. 2
- III.
 Salolav.oz. 1
 Olive oilfl.oz. 6
 Lime waterfl.oz. 6
- Dissolve the salol in the oil, add the lime water, and agitate well.

IV.
 It is also recommended first to wash the burns with saturated solution of boric acid and then to apply absorbent gauze saturated with the following:

- Lime waterfl.oz. 8
 Linseed oil, rawfl.oz. 8
 Thymolgr. 75

Dissolve the thymol in the oil; add the water, and agitate thoroughly.

In about 10 days substitute this ointment:

- Bismuth subnitrategr. 150
 Boric acidgr. 75
 Olive oilfl.dr. 5
 Lanolinav.oz. 2

- V.
 Lanolinav.oz. 1
 Benzoeated lardav.oz. 2
 Lime waterfl.oz. 3

- VI.
 Mentholgr. 20
 Iodoformgr. 20
 Glycerinfl.oz. 4
- Mix well.

VII. Some of the preparations under the heading "Ointments or Salves," may also be utilized.

Catarrh and Cold in the Head, Remedies for.

Catarrh (or coryza) manifests itself in two general forms, one being acute, which is usually known as "cold-in-the-head;" the other, the chronic form, which is known by the popular designation "catarrh." Both forms may be treated in the same, or, at least, in a similar, manner.

The remedies for catarrh are multiform. Some are snuffs, others are to be used by

inhalation; some by spraying, others by insufflation or by injection with syringe or a douche. Others again are in the form of an ointment, which is to be applied to the interior of the nostrils, then to be drawn up; and finally others again are to be taken internally, the latter containing tonics combined with some agent which diffuses itself through the system and thus attacks the local manifestations of the disease.

The snuffs contain various agents, the most conspicuous being cocaine, the indiscriminate or careless use of which cannot be too severely condemned. Purchasers of such snuffs should invariably be warned that the cocaine habit is, of all forms, probably the most deadly, and that great danger attends its use in catarrh snuffs. It should never be recommended in cases of chronic catarrh where its use would be liable to prove continuous.

The catarrh remedies used by inhalation contain either menthol or iodine combined with carbolic acid. Those used by spraying (with nasal atomizers) contain liquid petrolatum, having in solution menthol, thymol and various antiseptic volatile oils. The catarrh ointments contain ingredients similar to those of the preceding. They are usually made with thymol, menthol, or some oil, together with boric acid or bismuth salt and petrolatum.

The combinations for insufflation contain potassium iodide, or other iodide, salt, potassium chloride, golden seal, carbolic acid, camphor, etc.

Good titles for catarrh remedies are "catarrh remedy," "catarrh snuff," "cream balm," "catarrh balm," "catarrhine," "catarrh cure," "menthol snuff," "mentholin," etc.

- I.
 Boric acidgr. 60
 Iodoformgr. 60
 Bismuth subnitrategr. 60
 Elm barkgr. 700

Mix and use as a snuff.

- II.
 Mentholgr. 5
 Sugarav.oz. 1

Mix and reduce to very fine powder. Use as a snuff.

III.

Sodium salicylate.....	gr. 75
Boric acid, fine powder.....	av.oz. 1
Cocaine hydrochlorate.....	gr. 20

Use like the preceding.

IV.

Cocaine hydrochlorate.....	gr. 2
Bismuth subnitrate.....	gr. 90
Quinine bisulphate.....	gr. 6
Orris root.....	gr. 80

All should be in fine powder and should be well mixed.

V.

Boric acid.....	gr. 10
Orris root.....	gr. 25
Roasted coffee.....	gr. 150
Sugar.....	gr. 50
Milk sugar.....	gr. 250
Menthol.....	gr. 15

Mix the first five ingredients and reduce to an impalpable powder, then incorporate thoroughly with the menthol.

VI.

Sodium bicarbonate.....	gr. 8
Magnesium carbonate.....	gr. 12
Menthol.....	gr. 4
Cocaine hydrochlorate.....	gr. 16
Milk sugar.....	gr. 360

Mix and reduce to impalpable powder.

VII.

White hellebore, powder.....	gr. 120
Orris root, powder.....	gr. 60
Rice powder.....	av.oz. 1 3/4
Oil of lavender.....	drop 1
Oil of cassia.....	drop 1
Oil of lemon.....	drop 1

Reduce the drug to fine powder and mix with the oils.

VIII.

Sugar.....	av.oz. 1/2
Borax.....	av.oz. 1/4
Common salt.....	av.oz. 1/4
Oil of peppermint.....	drops 4

Reduce the sugar, borax and salt to fine powder and add the oil.

VIII.

Bismuth subnitrate.....	gr. 90
Benzoin.....	gr. 90
Boric acid.....	gr. 60
Menthol.....	gr. 3

Take a pinch 5 or 6 times daily.

IX.

Tannic acid.....	gr. 2
Orris root.....	gr. 90
Sugar.....	gr. 90

Mix and reduce to an impalpable powder.

X.

Cocaine hydrochlorate.....	gr. 10
Oil of eucalyptus.....	gr. 3
Iodoform.....	gr. 60
Sugar of milk.....	gr. 480

XI.

Boric acid, powder.....	av.oz. 1
Sugar, powdered.....	av.oz. 4
Menthol.....	gr. 80

XII.

Betol.....	gr. 150
Menthol.....	gr. 15
Cocaine.....	gr. 6
Coffee.....	gr. 80

Mix and reduce to very fine powder.

XIII.

Bismuth salicylate.....	gr. 360
Camphor.....	gr. 80
Cocaine hydrochlorate.....	gr. 1

Mix.

XIV. Other catarrh snuffs are mentioned in Part I.

XV.

Eucalyptol.....	fl.dr. 2
Terebene.....	fl.dr. 2
Menthol.....	gr. 16
Liquid petrolatum.....	fl.oz. 15

XVI.

Oil of eucalyptus.....	drops 8
Thymol.....	gr. 8
Menthol.....	gr. 4
Oil of wintergreen.....	drops 4
Liquid petrolatum.....	fl.oz. 16

The last two above are to be used in a nasal atomizer.

XVII.

Boric acid.....	gr. 5
Zinc sulphate.....	gr. 1
Distilled water.....	fl.oz. 1

To be used like the preceding.

XVIII.

Oil of eucalyptus.....	drops 20
Carbolic acid.....	drops 2
Liquid petrolatum.....	fl.oz. 1

Useful in all stages of nasal catarrh, including the grip. To be used by spraying.

XIX.

Carbolic acid, liquefied.....	fl.dr. 7
Oil of turpentine.....	fl.dr. 3
Alcohol.....	fl.dr. 15
Ammonia water.....	fl.dr. 8

This solution is dropped upon absorbent cotton which should be kept in a tightly

stoppered bottle, when not in use. The vapor is to be inhaled frequently. The vapors are also recommended for diphtheria.

The above is the well-known and largely used "olfactorium antieatarrhoicum" of Hager.

XX.

Compound tincture of iodine.....m.	30
Carbolic acid, crystal.....gr.	10
Glycerin.....fl.dr.	5
Water, enough to make.....fl.oz.	4

Mix the glycerin with the acid liquefied at a gentle heat, add the tincture and the water and expose the mixture to sunlight until it has become colorless.

This is the "Carbolized Solution of Iodine" of the N. F. and is used by inhalation.

XXI. Menthol is an excellent agent for treatment of catarrh by inhalation. It is commonly put up in vessels more or less resembling tubes, which may be opened at both ends to permit free circulation of air through the tube when in use, and which may be closed tightly when not in use.

XXII.

Boric acid, powder.....gr.	120
Menthol.....gr.	60
Thymol.....gr.	24
Eucalyptol.....drops	16
Bismuth subcarbonate.....gr.	120
Cold cream.....gr.	360
Petrolatum.....gr.	300

Dissolve the menthol and thymol in the petrolatum, which has been melted by the application of a gentle heat, allow the solution to solidify, add the other ingredients and make to an intimate mixture.

This mixture is to be applied into the nostrils several times daily.

XXIII.

Thymol.....gr.	3
Oil of wintergreen.....drops	2
Bismuth subcarbonate.....gr.	15
Petrolatum.....av.oz.	1

Prepare and use like the preceding.

XXIV.

Menthol.....gr.	1 to 5
Boric acid.....gr.	100
Petrolatum.....av.oz.	1½

Prepare and use like the preceding.

XXV.

Boric acid.....gr.	60
Borax.....gr.	60
Sodium chloride.....gr.	80
Lister's antiseptic solution.....fl.oz.	2
Water.....fl.oz.	6

This may be used by insufflation, but preferably by means of a douche.

XXVI.

Borax.....gr.	120
Sodium bicarbonate.....gr.	120
Carbolic acid.....fl.dr.	½
Glycerin.....fl.oz.	1
Water, enough to make.....fl.oz.	16

This is to be used like the preceding.

XXVII.

Sodium chloride.....gr.	240
Potassium chlorate.....gr.	100
Ammonium iodide.....gr.	4
Carbolic acid.....drops	16
Camphor, powder.....gr.	16
Golden seal, powder.....gr.	40

Mix well.

This is to be treated with water to make an infusion, which latter is then to be used by insufflation or injection.

XXVIII.

Potassium iodide.....gr.	60
Compound tincture of cardamom fl.oz.	4
Compound tincture of gentian..fl.oz.	12

Cathartics.

The class of remedial substances most commonly in demand partake of the form of cathartics. In offering a preparation of this kind for sale, it is customary, as well as advisable, to recommend it for chronic constipation or as a liver invigorator, a blood purifier, a remedy against biliousness or headache, an anti-dyspeptic, etc.

This class of pharmal remedies may take the form of an elixir, syrup, infusion, tincture, pastille or troche, effervescent salt, pill, confection, powder or species.

I.

Buckthorn bark.....av.oz.	8
Licorice root.....av.oz.	4
Butternut bark.....av.oz.	4
Fennel.....av.oz.	2
Caraway.....av.oz.	2
Ginger.....av.oz.	2
Fluid extract of senna.....fl.oz.	8
Water.....sufficient	

Mix the drug, reduce to coarse powder, introduce into a vessel containing 64

fluidounces of boiling water, continue boiling for 15 minutes, strain and express, adding enough water to make up the measure of 64 fluidounces. Allow this to stand a few hours, decant 56 fluidounces of clear liquid, add the fluid extract and flavor the whole, if thought advisable, by the addition of oil of anise, orange or peppermint.

II.

Senna.....	av.oz. 5
Licorice root.....	av.oz. 5
Buckhorn.....	av.oz. 5
Anise.....	av.oz. 1
Fennel.....	av.oz. 1
Caraway.....	av.oz. ½
Ginger.....	av.oz. ½
Rochelle salt.....	av.oz. 3
Alcohol,	
Water.....	of each, sufficient
Oil of wintergreen.....	drops 8
Oil of saffrafras.....	drops 8

Reduce the drugs to moderately fine powder and percolate with diluted alcohol until 48 fluidounces are obtained. Then dissolve the Rochelle salts in 16 fluidounces of water, add this to the percolate and flavor the whole with the oils.

III. Compound cathartic elixir or compound elixir of cascara sagrada may be sold or dispensed if desired.

IV.

Fluid extract of cascara sagrada (tasteless).....	fl.oz. 1½
Fluid extract of berberis aquifolium.....	fl.dr. 3
Senna, coarse powder.....	fl.dr. 6
Prunes.....	av.oz. 2
Figs.....	av.oz. 2
Oil of fennel.....	drops 10
Oil of cinnamon.....	drops 10
Oil of cloves.....	drops 5
Sugar.....	av.oz. 3
Water, enough to make.....	fl.oz. 16

Chop the figs and prunes, without stones, to a fine hash, mix with senna and steep in 12 fluidounces of water for 8 hours, and strain through a No. 4 wire sieve. To this liquid add the sugar, dissolve by agitation, add the fluid extracts and oils, and make up to one pint with hot water, which has been poured over the fruit on sieve.

Four fluidrams of fluid extract of licorice or 180 grains of powdered nutmegs may be substituted for the oils as a flavor.

V.

Bitterless fluid extract of cascara fl.oz.	2
Fluid extract of rhubarb.....	fl.oz. 1
Fluid extract of senna.....	fl.oz. 1
Oil of fennel.....	drops 5
Oil of caraway.....	drops 5
Potassium carbonate.....	gr. 10
Saccharin.....	gr. 80
Simple syrup, enough to make.....	fl.oz. 16

Add the potassium carbonate to the fluid extract of rhubarb and dissolve, then add the other fluid extracts, the oils and saccharin, and finally the syrup.

VI.

Extract of senna, deresinified.....	av.oz. 4
Pulp of purging cassia.....	av.oz. 2
Pulp of tamarinds.....	av.oz. ½
Extract of licorice.....	gr. 180
Resin of scammony.....	gr. 180
Tartaric acid.....	gr. 60
Sugar.....	av.oz. 5

Make into oval lozenges of 80 grains each. These may be dusted with powdered sugar or they may be dipped in melted chocolate and afterwards covered with a coating of granulated sugar.

VII. Wash some dried prunes (a pound, for instance), place them in a saucepan over a dull fire or on a sand-bath, with just sufficient water to nearly cover them; when they have boiled long enough to become quite soft, and the greater part of the water has been evaporated, allow them to cool, and rub them in a large mortar so as to crush the fruit, but not the kernels. Transfer them to a coarse straining cloth and squeeze the pulp through it. This should be about the consistence of honey in the water. If not, it can be made so by evaporating it over a water bath. Now make a mixture of:

Senna, powder.....	av.oz. 4
Sugar, powder.....	av.oz. 4
Jalap, powder.....	av.oz. ½
Gum arabic, powder.....	av.oz. ¾
Aromatic powder.....	av.oz. ¾

Add sufficient quantity of the prune paste to make a mass and divide into troches of convenient size.

VIII. Confection of senna of figs, and of prunes in Part I, may be sold or dispensed either as they are in paste form or they may be molded into pastilles like the preceding.

IX.

Jalap, powder.....	av.oz. 2
Bitartrate of potassium.....	av.oz. 2
Sugar, powdered.....	av.oz. 12
Oil of orange.....	fl.dr. 2
Mix. Dose, 1 to 2 teaspoonfuls.	

X.

Senna, powder.....	av.oz. 2
Sulphur.....	av.oz. 2
Fennel, powder.....	av.oz. 1
Aniseed, powder.....	av.oz. 1
Cream of tartar.....	gr. 800
Licorice root, powder.....	av.oz. 8
Sugar, powder.....	av.oz. 8

This is very similar to compound licorice powder.

XI. Formulas for cathartic pills might be given by the score. The compound cathartic or vegetable cathartic pills may be supplied as cathartic pills. Other formulas which may be used are the following:

Aloin.....	gr. 10
Podophyllin.....	gr. 10
Capsicum.....	gr. 10
Extract of nux vomica.....	gr. 20

Make 100 pills.

Aloin.....	gr. 10
Jalap.....	gr. 10
Extract of henbane.....	gr. 5
Extract of nux vomica.....	gr. 5
Oleoresin of capsicum.....	gr. 5
Podophyllin.....	gr. 20

Make 100 pills.

These latter two form very small pills and may be called "Little Liver Granules," "Little Cathartic Pills," or some similar name.

XII. Laxative species, Part I., may be dispensed when a cathartic tea is demanded. The next two formulas may also be utilized:

XIII.

Senna, cut.....	av.oz. 8
Manna.....	av.oz. 8
Coriander.....	av.oz. 1

XIV.

Senna.....	av.oz. 8
Couch grass, cut.....	av.oz. 8
Fennel, bruised.....	gr. 160
Elder flower.....	gr. 160

Mix well. This may be sold as "German Herb Tea," or "Cathartic Tea."

XV.

Buckthorn bark, cut.....	av.oz. 10
Dandelion, cut.....	av.oz. 10
Senna, cut.....	av.oz. 10
Licorice root, cut.....	av.oz. 2
Coriander, bruised.....	gr. 800
Anise, bruised.....	gr. 800

XVI. The following may be dispensed as "Grape Salt" or "Fruit Salt" or "Fruit Saline:"

Sodium bicarbonate.....	av.oz. 6
Tartaric acid.....	av.oz. 2
Cream of tartar.....	av.oz. 10
Rochelle salt.....	av.oz. 4
Sugar.....	av.oz. 1
Oil of lemon.....	m. 40
Oil of orange.....	m. 20

XVII. Artificial Carlsbad salt (Part IV) or the same salt in effervescent form may be dispensed for cathartic purposes; also the effervescent magnesium citrate (Part I) may be used for the same purpose.

XVIII. Among other preparations that may be recommended for cathartic purposes are some of the liver remedies, blood purifiers and bitters.

Chilblain Cures.

Pharmacists are often called upon for some simple remedy for the relief of the annoying affection known as chilblains. The formulas which follow may be recommended for their relief and cure.

I.

Creosote.....	drops 12
Goulard's extract.....	drops 12
Extract of opium.....	gr. 1½
Pine tar.....	gr. 90
Lard.....	av.oz. 1

II.

Zinc oxide.....	gr. 60
Camphor, powder.....	gr. 30
Myrrh, powder.....	gr. 30
Opium powder.....	gr. 30
Lard.....	gr. 480

Dissolve the camphor in the lard, which has been melted at a gentle heat, allow this to cool, add the other ingredients, and mix well.

III.

Opium, powdered.....	gr. 30
Camphor.....	gr. 40
Nutgall ointment.....	av.oz. 1

IV.

Oil of eucalyptus.....	fl.dr.	2
Camphor.....	gr.	110
Carbolic acid.....	fl.dr.	1
Yellow wax.....	av.oz.	½
Petrolatum.....	av.oz.	8

Melt the wax and add the petrolatum; when nearly cold, add the other ingredients previously well mixed.

V.

Zinc soiiodol.....	gr.	48
Simple cerate or petrolatum.....	av.oz.	1

VI.

Beef marrow.....	gr.	300
Marshmallow ointment.....	av.oz.	2¼
Venice turpentine.....	gr.	150
Hydrochloric acid.....	fl.dr.	2½
Camphor.....	gr.	90
Extract of opium.....	gr.	50

Melt the fats together and dissolve the camphor in the fluid, soften the extract of opium with a few drops of water in a mortar, and rub up with about one-half ounce of the fats, then add more of the fats, so as to have the extract equally distributed; mix with the remainder, and incorporate the hydrochloric acid by constant stirring, as in making cold cream.

VII.

Oil of rosemary.....	drops	15
Camphor.....	gr.	120
Oil of turpentine.....	fl.oz.	1
Lard.....	av.oz.	4½

VIII.

Citrin ointment.....	gr.	480
Camphor.....	gr.	60
Oil of turpentine.....	fl.dr.	2
Olive oil.....	fl.dr.	4

To be applied with gentle friction before the chilblains break.

IX.

Ammonium chloride.....	gr.	80
Water.....	fl.oz.	4
Hydrochloric acid.....	fl.dr.	1
Alcohol.....	fl.oz.	1½

Apply morning and evening.

X.

Zinc oxide.....	gr.	240
Tannic acid.....	gr.	120
Camphor.....	av.oz.	1
Peru balsam.....	fl.oz.	2
Glycerin.....	fl.oz.	2½

XI.

Carbolic acid.....	drops	15
Camphor.....	gr.	60
Eucalyptus oil.....	fl.dr.	1
Alcohol, enough to make.....	fl.oz.	4

XII.

Resorcin.....	gr.	35
Ichthyol.....	gr.	35
Tannin.....	gr.	35
Water.....	fl.oz.	8

To be painted on at night.

XIII.

Carbolic acid.....	gr.	6
Liniment of aconite.....	fl.dr.	2
Liniment of belladonna.....	fl.dr.	2
Collodion, flexible.....	fl.oz.	1

To be painted on once or twice daily.

XIV.

Solution of lead subacetate.....	fl.dr.	2
Camphor.....	gr.	120
Oil of turpentine.....	fl.oz.	1

XV. Other suitable preparations may be found under the head of "Ointments or Salves," and "Liniments," Part II.

Cholera Remedies.

See Diarrhoea and Dysentery Remedies.

Corn Eradicators.

Remedies for the removal of corns are very numerous and assume divers forms. One of the most common and most popular is a preparation of collodion containing extract of cannabis indica and salicylic acid, sometimes also lactic or acetic acid. Another popular preparation is an ointment or cerate containing about 10 per cent of salicylic acid. These are usually to be applied for 4 or 5 nights consecutively, followed by a hot foot bath, when the corn can be picked out. If this first treatment does not produce satisfactory results, it should be repeated. Better results are obtained if a hot foot bath be taken, also, before application of the remedy, then scraping or cutting off the calloused tissue as far as possible.

I.

Salicylic acid.....	gr.	480
Extract of indian hemp (Squibb's).....	gr.	90
Alcohol.....	fl.dr.	9
Flexible collodion.....	sufficient	

Dissolve the extract in the alcohol, and the salicylic acid in about 5 av.ounces of flexible

collodion contained in a tared bottle. Then add the former solution to the latter, and finally add enough flexible collodion to make 10 av.ounces.—N. F.

II.

Salicylic acidgr. 80
Lactic acid, concentrated.....gr. 20
Collodion, enough to makefl.oz. 1

Mix and dissolve. Apply like the preceding.

III.

Extract of cannabis indica,
(Squibb's).....gr. 80
Salicylic acidgr. 800
Oil of turpentinefl.dr. 2½
Collodion.....fl.oz. 5
Acetic acid, glacialfl.dr. 1

Mix the first three ingredients intimately, add the collodion, dissolve, and then add the acetic acid.

IV.

Salicylic acid.....av.oz. ½
Simple cerateav.oz. 4½

V.

Yellow wax.....av.oz. 6
Venice turpentine.....av.oz. ¾
Resinav.oz. ½
Salicylic acid.....av.oz. ½
Peru balsamav.oz. ½
Petrolatumav.oz. 1

Melt the resin and wax and add the other ingredients; stir until cold.

VI.

Potassium carbonateav.oz. 1
Simple cerateav.oz. 2
Verdigris....enough to color sufficiently

To be applied on a cloth.

VII.

Lead plasterav.oz. 8
Resinav.oz. 2
Verdigrisav.oz. 1

Melt together and spread upon leather.

VIII.

Resinav.oz. 8
Yellow wax.....av.oz. 8
Gum turpentineav.oz. 1
Elemiav.oz. 1
Beef tallowav.oz. 1
Wood charcoal, very fine powderav.oz. 1
Monochloracetic acidgr. 108
Glycerinfl.dr. 1½

Melt the first five ingredients, also mix the other ingredients, and incorporate thoroughly

with the first mixture, when the latter begins to cool, and stir frequently until cool.

This plaster may be formed into pills which, when used, may be warmed in the hand and then spread out flat on a piece of silk; the latter then to be applied to the corn.—D.

If this plaster be warmed and spread on cloths, the latter may be sold as "Spread Corn Plaster."

IX.

Soap plasterav.oz. 6
Salicylic acid.....av.oz. ½

Melt the plaster, add the salicylic acid, and stir frequently until cool. This may be spread upon cloth like the preceding.

X. The remedies previously mentioned will prove of more benefit to "hard" corns than to "soft" corns. It has been recommended to treat the latter by painting with a solution of silver nitrate in 8 parts of distilled water every fourth or fifth day, in the meantime keeping the toes apart by means of a pledget of cotton smeared with petrolatum, zinc ointment or other bland fatty substance.

The cure or removal of corns is facilitated by frequent washing of the feet, followed by removal of all dead tissue.

Lately dry tannin placed between the toes where the corn is located is recommended as a cure for "soft" corns.

Cough and Cold Remedies.

Suggested titles for these remedies are "Cough Remedy," "Cough Mixture," "Cough Syrup," "Syrup of Tar and Wild Cherry," "Children's Cough Cure" (if intended for children exclusively), "White Pine Syrup," "Honey of Hoarhound and Tar," "Tar, Tolu and Wild Cherry," "Tar Hoarhound Cough Syrup," "Lung Balsam," "Expectorant," "Cough Cordial," "Cough Balsam," etc.

Opium in some form or a salt of morphine are constituents of almost every cough mixture. This should not be administered to small children or infants and hence it may be advisable to have two preparations, one without morphine or opium; this to be entitled

"Children's Cough Cure," or "Infant Cough Mixture," and the other with morphine or opium.

Other remedies are noticed under the head of Remedies for Throat Affections.

I.

Syrup of tolu	fl.oz. 4
Syrup of wild cherry	fl.oz. 4
Tincture of henbane	fl.oz. 4
Hoffman's anodyne	fl.oz. 4
Water	fl.oz. 4

II. White Pine "Expectorant" is an excellent remedy. For formula, see Part I. The morphine may be omitted if desired.

III.

Extract of licorice, purified	av.oz. 1
Syrupy glucose	av.oz. 10
Ammonium chloride	av.oz. 1
Paregoric	fl.oz. 1
Wine of antimony	fl.dr. 4
Spirit of nitrous ether	fl.dr. 2
Water, enough to make	fl.oz. 16

Mix. Dose, 1 to 4 teaspoonfuls.

This mixture is known as "Improved Brown Mixture."

IV.

Tincture of tolu	fl.dr. 4
Paregoric	fl.oz. 2
Syrup of squill	fl.oz. 2
Honey, enough to make	fl.oz. 16

Dose. One teaspoonful.

V.

Terebene	fl.oz. 2
Acacia, powder	av.oz. 1
Sugar	av.oz. 6
Yolk of egg	4
Anise water	fl.oz. 4
Camphor water	fl.oz. 1
Distilled water, enough to make	fl.oz. 16

Triturate the acacia, sugar, and terebene in a mortar, beat the egg yolk with the flavored waters, make an emulsion by rubbing this with the contents of the mortar, and add the distilled water. Lemon juice may be substituted for the distilled water.

VI.

Oil of tar	fl.dr. 2
Fluid extract of hoarhound	fl.dr. 4
Oil of anise	drops 5
Jamaica rum	fl.oz. 8
Honey, enough to make	fl.oz. 16

Dose: A half to 1 teaspoonful.

VII.

Fluid extract of hoarhound	fl.oz. 6
Syrup of wild cherry	fl.oz. 18
Syrup of tar	fl.oz. 36

VIII.

Hoarhound	gr. 120
Irish moss	av.oz. 1½
Ammonium chloride	av.oz. 2½
Water, boiling	fl.oz. 64
Oil of tar	fl.dr. 2
Chloroform	fl.dr. 4
Fluid extract of senna	fl.oz. 2
Compound syrup of squill	fl.oz. 16

Mix the hoarhound, Irish moss and ammonium chloride, add the water, allow to stand for 12 hours, and strain. Dissolve the oil of tar in the chloroform, add the fluid extract and compound syrup, and add to the previous mixture.

IX.

Syrup of tar	fl.oz. 64
Syrup of wild cherry	fl.oz. 45
Syrup of squill	fl.oz. 16
Fluid extract of lobelia	fl.dr. 6
Tincture of opium	fl.oz. 4
Fluid extract of ipecac	fl.dr. 4

X.

Syrup of tar	fl.oz. 13
Syrup of tolu	fl.oz. 13
Syrup of wild cherry	fl.oz. 50
Syrup of squill	fl.oz. 16
Syrup of senega	fl.oz. 6
Ammonium chloride	av.oz. 3½
Morphine sulphate	gr. 15
Tartar emetic	gr. 80
Water	fl.oz. 20
Glycerin	fl.oz. 10

Dissolve the ammonium chloride, morphine salt, and tartar emetic in the water, filter the solution, and add the other ingredients.

Either of these last two formulas may be used for the preparation of Syrup of Tar and Wild Cherry.

XI.

Ammonium chloride	av.oz. 4
Chloroform	fl.oz. 1
Syrup of tolu	fl.oz. 20
Syrup of licorice, enough to make	gal. 1

Mix all and dissolve by agitation.

XII. See Yerba Santa Cough Mixture, or Compound Syrup of Yerba Santa.

XIII.

Wild cherry bark	gr. 240
Senega	gr. 240
Ipecac	gr. 120
Extract of conium	gr. 15
Gin	fl.dr. 1
Compound tincture of cardamom	fl.dr. 1
Water	sufficient

Mix the drugs, reduce to coarse powder, extract by percolation with water so as to

obtain 8 fluidounces of percolate and to this add the other ingredients.

Two teaspoonfuls in water constitute the usual dose to relieve cough.

This is known as "Dr. Pancoast's Cough Mixture."

XIV.

Tincture of capsicum	fl.oz. 1
Syrup of wild cherry	fl.oz. 2
Mucilage	fl.oz. 2
Syrup of tar	fl.oz. 8
Syrup of hydriodic acid	fl.oz. 4

Label: A teaspoonful four times daily for persistent, dry, hacking cough, which resists usual treatment.

XV.

Raw linseed oil	fl.oz. 2
Oil of cassia	fl.dr. ½
Oil of wintergreen	fl.dr. ½
Oil of sassafras	fl.dr. ½
Acacia, powder	gr. 240
Mucilage of Irish moss, N. F.	fl.oz. 2
Glycerin	fl.oz. 1
Simple syrup	fl.oz. 2½
Morphine sulphate	gr. 2
Chloral hydrate	gr. 240
Diluted hydrocyanic acid	fl.dr. ½
Water, enough to make	fl.oz. 16

Make an emulsion in the usual way.

This may be sold as a "flaxseed or linseed cough syrup or balsam."

XVI.

Spirit of chloroform	drops 20
Hydrobromic acid	drops 80
Syrup of squill	fl.dr. 1
Water, enough to make	fl.oz. 1

Mix. To be given in 1 dose for an adult; for children, the quantity to be reduced according to age.

This is known commonly as "Fothergill's Hydrobromic Acid Cough Mixture."

XVII. See also Emulsion of Linseed Oil, Part I., which may be employed.

XVIII.

Tincture of red spruce gum	fl.oz. 2
Sugar	av.oz. 26
Water	fl.oz. 16
Caramel	fl.dr. 1 or gr. 60
Fuller's earth	gr. 120

Mix 2 ounces of the sugar with the tincture of spruce and fuller's earth, rub well and add the water in divided portions; then filter, returning the filtrate until it comes

through clear; add the caramel and sugar, which dissolve with a gentle heat, and strain while warm.

A syrup of a different and richer appearance may be made by mixing equal parts of the syrup prepared as above and Syrup of Wild Cherry of the U. S. Pharmacopœia.

The tincture of red spruce gum directed for use in the above is best prepared as follows:

Red spruce gum, fine powder	av.oz. 2
Alcohol, enough to make	fl.oz. 16

Macerate until dissolved and filter.

The above syrup is the formula for what is known as "Spruce Gum Syrup," or "Syrup of Red Spruce Gum."

XIX.

Ammonium chloride	gr. 180
Tartar emetic	gr. 2
Morphine sulphate	gr. 3
Syrup of licorice	fl.oz. 4

In teaspoonful doses.

This preparation has been known as "Davis' Cough Mixture."

XX.

Syrup of squill	fl.dr. 2
Wine of ipecac	fl.dr. 1
Paregoric	fl.dr. 1
Simple syrup	fl.dr. 4
Water	fl.oz. 8

This preparation has been known as "Dr. Child's Cough Mixture."

XXI.

Tincture of tolu	fl.oz. 4
Fluid extract of lobelia	fl.oz. 2
Fluid extract of cannabis indica	fl.oz. 2
Chloroform	fl.oz. 1
Morphine sulphate	gr. 32
Tartar emetic	gr. 32
Spirit of peppermint	fl.dr. 1½
Simple syrup	gal. 1

Dissolve the morphine and tartar emetic in a little water; mix the two fluid extracts, tincture, chloroform and spirit, shake well, add a portion of the syrup, shake again, add the remainder of the syrup and then the solution previously prepared.

This makes a turbid preparation such as is commonly sold as "Chlorodyne Cough Cure."

XXII. If a lozenge is desired, the Troches of Glycyrrhiza and Opium of the U. S. P. will form a very satisfactory article. Or the

lozenges mentioned under the heading "Remedies for Throat Affections" may be employed.

Cough (Whooping) Remedies.

- I.
 Ammonium picrate.....gr. 1
 Ammonium chloride.....gr. 24
 Purified extract of licorice.....gr. 60
 Water.....fl.oz. 8

Dose: A teaspoonful for children up to 2 years of age and 2 teaspoonfuls for children 3 to 5 years of age.

- II.
 Ether.....fl.oz. 6
 Chloroform.....fl.oz. 8
 Oil of turpentine.....fl.oz. 1

Hold to the mouth on cloth or sponge, and allow the child to inhale the vapor.

- III.
 Creosote, pure.....drops 10
 Paregoric.....fl.oz. 2
 Syrup of glucose.....fl.oz. 14
 Caramel.....sufficient to color

- IV.
 Butyl-chloral hydrate.....gr. 15
 Potassium bromide.....dr. 60
 Ether.....drops 20
 Tincture of belladonna.....drops 15
 Tincture of hyoscyamus.....drops 25
 Syrup of tolu, enough to make..fl.oz. 4

Label: A teaspoonful 4 times a day.

- V.
 Terpin hydrate.....gr. 15
 Antipyrin.....gr. 15
 Acacia.....gr. 150
 Syrup of orange.....fl.dr. 18
 Linden flower water.....fl.oz. 2

Diarrhoea and Dysentery Remedies.

These preparations may be put under the titles "Blackberry Balsam," "Blackberry Cordial," "Blackberry Elixir," "Diarrhoea Cordial," "Diarrhoea Remedy," "Diarrhoea and Cholera Cure," etc.

The ingredients of these preparations number among the following: Blackberry root bark, blackberry juice, rhubarb, nutgall, witch hazel, catechu, kino, peppermint, opium, capsicum, ginger, aromatics and syrups. The blackberry juice and syrup are introduced for the purpose of disguising the styptic taste of the blackberry root bark, nutgall or other astringent. This is also one object of employing the aromatics, these

latter also serving as carminatives. Capsicum is introduced with the view of utilizing its stimulant properties. Opium should be introduced with some misgivings, for, as a rule, these "cordials" or "balsams" are given to children. In fact, it may be advisable to have two preparations, one containing opium and intended for older children and adults, the other, without opium, for infants and younger children.

I. Compound Elixir of Blackberry, Part I.

II. Aromatic Syrup of Blackberry, Part I.

III. Compound Elixir of Dewberry. See Part I.

- IV.
 Fluid extract of blackberry root fl.oz. 2
 Tincture of vanilla.....fl.dr. 4
 Compound elixir of taraxacum..fl.oz. 4
 Simple elixir, enough to make..fl.oz. 16

- V.
 Fluid extract of blackberry root fl.oz. 2
 Simple elixir.....fl.oz. 7
 Compound elixir of taraxacum..fl.oz. 7

- VI.
 Fluid extract of blackberry root fl.oz. 10
 Fluid extract of galls.....fl.oz. 2
 Aromatic tincture.....fl.oz. 4
 Simple elixir, enough to make...gal. 1

Set aside a few days and filter.

- VII.
 Camphor.....av.oz. 2¼
 Fluid extract of rhubarb.....fl.oz. 3½
 Oil of peppermint.....fl.oz. 1
 Tincture of capsicum.....fl.oz. 6
 Tincture of opium.....fl.oz. 10
 Chloroform.....fl.dr. 4
 Sodium bicarbonate.....av.oz. 8
 Alcohol.....fl.oz. 64
 Simple syrup, enough to make...gal. 1

Dissolve the camphor and oil in the alcohol, and add the chloroform and two tinctures. Mix the fluid extract, sodium bicarbonate, and a portion of the syrup, let stand in an open vessel for several hours, then add to the previous mixture, add the remainder of the syrup, and filter in a well-covered funnel.

- VIII.
 Fluid extract of blackberry root..fl.oz. 8
 Aromatic syrup of rhubarb.....fl.oz. 8
 Fluid extract of hamamelis.....fl.oz. 8
 Tincture of opium.....fl.oz. 2

A teaspoonful every 2, 3, or 4 hours; a child should be given 5 drops for every year of its age.

IX.

Ripe blackberries.....	pint	1
Blackberry root.....	gr.	480
Mace.....	gr.	60
Cloves.....	gr.	60
Allspice.....	gr.	60
Cassia.....	gr.	60
Ginger.....	gr.	60
Port wine.....	fl.oz.	4
Alcohol.....	fl.oz.	2
Water.....	sufficient	

Express the juice from the berries and add sufficient water through the residue to make the liquid measure 12 fluidounces; add the wine and alcohol. Mix the drugs and grind to tolerably fine powder, moisten with the liquid before mentioned, pack lightly in a percolator, soak with menstruum, macerate for 24 hours, and then percolate, passing the remainder of the liquid through the drug. If the percolate is less than 16 fluidounces, add enough menstruum consisting of alcohol and water in the proportion of 1 of the former to 4 of the latter to make up this amount. Known as "Blackberry Cordial."

X.

Fluid extract of ipecac.....	fl.dr.	6
Tincture of opium.....	fl.oz.	3
Aromatic tincture of rhubarb.....	fl.oz.	3
Simple syrup.....	fl.oz.	3
Alcohol.....	fl.oz.	3
Fluid extract of logwood.....	fl.dr.	12
Fluid extract of blackberry root.....	fl.dr.	12

Dose: A teaspoonful every 3 hours.

XI.

Fluid extract of blackberry root.....	fl.oz.	32
Fluid extract of ginger.....	fl.oz.	10
Compound tincture of catechu.....	fl.oz.	48
Paregoric.....	fl.oz.	15
Simple syrup, enough to make.....	gal.	1

XII.

Fluid extract of blackberry root.....	fl.oz.	4
Tincture of opium.....	fl.oz.	4
Tincture of ginger.....	fl.oz.	4
Tincture of catechu.....	fl.oz.	4
Tincture of kino.....	fl.oz.	4
Tincture of capsicum.....	fl.oz.	1
Sugar.....	av.oz.	8
Alcohol.....	fl.oz.	36
Water, enough to make.....	gal.	1

Mix all and dissolve the sugar by agitation or percolation.

XIII. Some of the preparations in Part I, known as "Cholera Mixtures," might be utilized.

XIV. See also the Liniments in Part II.

XV.

Tincture of opium, deodorized.....	fl.dr.	2
Diluted sulphuric acid.....	fl.dr.	2
Tincture of cardamom comp.....	fl.oz.	1½
Camphor water, enough to make.....	fl.oz.	6

Directions: A tablespoonful, undiluted, every 3 hours until relieved.

XVI.

Tincture of opium, deodorized.....	fl.dr.	4
Tincture chloride of iron.....	fl.dr.	4

Mix; 10 to 15 drops in some water, after each movement of the bowels.

These are useful for acute and chronic dysentery.

Dyspepsia Remedies.

Owing to the prevalence of dyspepsia, remedies for this complaint are in considerable demand. Most of the "bitters" and the liver remedies, and many of the blood purifiers are usually recommended for dyspepsia.

The remedies recommended especially for dyspepsia contain some stomachic tonic like golden seal, columbo, gentian, bitter orange, etc., combined with a laxative like aloes, sodium phosphate, rhubarb, etc.; sometimes an alkali like sodium bicarbonate, as well as a carminative or stimulant like peppermint, capsicum, elixir, etc.

I.

Fluid extract of rhubarb.....	fl.dr.	5
Fluid extract of columbo.....	fl.dr.	5
Fluid extract of chamomile.....	fl.dr.	5
Fluid extract of bitter orange.....	fl.dr.	10
Fluid extract of life everlasting.....	fl.oz.	5
Sodium phosphate.....	av.oz.	2
Water, hot.....	fl.oz.	8
Simple elixir, enough to make.....	fl.oz.	64

Mix the fluid extracts with a portion of the elixir, dissolve the sodium salt in the water, add to the previous mixture, then incorporate the remainder of the elixir, and filter.

II.

Rhubarb.....	av.oz.	3
Golden seal.....	av.oz.	3
Cape aloes.....	gr.	60
Peppermint herb.....	av.oz.	3
Potassium carbonate.....	av.oz.	1
Capsicum.....	gr.	15
Sugar.....	av.oz.	24
Alcohol.....		
Water.....	of each,	sufficient

Mix the rhubarb, golden seal, aloes, peppermint and capsicum, reduce to coarse powder, extract by percolation with a mixture of

8 volumes of alcohol and 10 of water, so as to obtain 50 fluidounces of percolate, having first dissolved the potassium carbonate in the water. In the percolate dissolve the sugar, either by agitation or percolation, and then add enough more of the menstruum to make 64 fluidounces.

III.

Sodium bicarbonate.....	av.oz.	1
Sodium sulphate.....	av.oz.	2
Tincture of gentian compound.....	fl.oz.	4
Fluid extract of senna.....	fl.dr.	2
Fluid extract of rhubarb.....	fl.dr.	4
Oil of caraway.....	drops	20
Water, sufficient to make.....	fl.oz.	16

Dissolve the sodium sulphate and bicarbonate in the water, add the oil of caraway to the tincture and fluid extracts and mix together. Dose: A tablespoonful after meals and at bedtime, in some water.

IV.

Compound tincture of gentian.....	fl.oz.	1
Tincture of columbo.....	fl.dr.	4
Tincture of nux vomica.....	fl.dr.	$\frac{1}{2}$
Nitromuriatic acid.....	fl.dr.	2
Simple syrup, enough to make.....	fl.oz.	4

A teaspoonful 3 times daily.

V.

Carbolic acid.....	drops	18
Tincture nux vomica.....	fl.dr.	$1\frac{1}{2}$
Nitrohydrochloric acid, diluted.....	fl.dr.	$1\frac{1}{2}$
Pepsin elixir.....	fl.oz.	9
Brandy.....	fl.oz.	6

Direction: A teaspoonful 3 times a day before meals. This is used in fermentative dyspepsia.

VI.

Cocaine hydrochlorate.....	gr.	12
Hydrochloric acid, diluted.....	fl.dr.	1
Elixir of Garus or aromatic elixir.....	fl.oz.	$12\frac{1}{2}$
Water.....	fl.oz.	$2\frac{1}{2}$

Dose: One tablespoonful after eating, for dyspepsia complicated with gastralgia.

This is known as "Huchard's Elixir."

VII.

Infusion of rhubarb.....	fl.oz.	$14\frac{1}{2}$
Resorcin.....	gr.	120
Sodium bicarbonate.....	gr.	320
Peppermint water.....	fl.oz.	1

A tablespoonful every hour. Useful for catarrh of the stomach.

VIII. Sometimes elixir of pepsin or compound powder of pepsin or tablets, soda and

peppermint, or soda and pepsin are recommended for dyspepsia.

IX. Recently dyspepsia tablets have appeared on the market. Something very similar may be prepared according to this formula:

Sodium bicarbonate.....	gr.	5
Resin of jalap.....	gr.	1
Extract of hydrastis, powder.....	gr.	3
Menthol.....	gr.	$\frac{1}{8}$

Make 1 tablet. Pepsin may be added if desired, but it will not serve any purpose whatever in the mixture.

One, 2 or 3 of the tablets may be taken after each meal.

This mixture may conveniently be compressed by one of the hand compressors now so readily obtained.

Ear Medicines.

Medicines for the ear are of two kinds, one for earache, which may be called "Earache Drops," "Earache Remedies," or "Earache Oils," the other being intended for the improvement of the hearing, the latter kind being known as "Ear Oils" or "Acoustic Oils." Of course no medicine will actually improve the hearing when impaired, unless it be due to a waxy concretion present, which may be softened and dissolved.

I. Earache Remedies:

A.

Olive oil.....	fl.dr.	4
Chloroform.....	fl.dr.	4

B.

Camphor-chloral.....	m.	40
Glycerin.....	fl.dr.	$4\frac{1}{2}$
Oil of sweet almonds.....	fl.dr.	$2\frac{1}{4}$

Three drops of this mixture on absorbent cotton to be placed in the ear twice a day, some also being rubbed behind the ear.

II. Acoustic Oils:

A.

Oil of turpentine.....	fl.oz.	1
Oil of sweet almonds.....	fl.oz.	6

One to 2 drops on cotton in the ear.

B.

Garlic, fresh.....	av.oz.	$\frac{1}{2}$
Bay leaves.....	av.oz.	$\frac{1}{2}$
Olive oil.....	fl.oz.	8

Boil together 15 minutes and filter while hot.

- C.
- | | | |
|-----------------------|--------|-----|
| Olive oil..... | fl.dr. | 2 |
| Oil of cajeput..... | fl.dr. | 2 |
| Oil of sassafras..... | fl.dr. | 2 |
| Oil of rosemary..... | fl.dr. | 2 |
| Camphor..... | gr. | 120 |
- Mix and dissolve.

While all of the above will soften ear wax, the following is also employed for this purpose:

- | | | |
|-----------------|--------|----|
| Boric acid..... | gr. | 15 |
| Glycerin..... | fl.dr. | 4 |
| Water..... | fl.dr. | 4 |

Mix and dissolve by the aid of heat. Warm 5 or 10 drops and put into the ear twice daily.

Eczema or Salt Rheum, Remedies for.

Eczema is one of the numerous class of parasitic skin diseases like itch, ringworm, barber's itch, etc., and the treatment is consequently very similar.

- I.
- | | | |
|-------------------------|-----|-----|
| Rice powder..... | gr. | 240 |
| Talcum..... | gr. | 120 |
| Zinc oleate..... | gr. | 60 |
| Bismuth subnitrate..... | gr. | 30 |

This should be dusted freely on the surface, and repeated every 2 or 3 hours. Sometimes, on account of the intense pruritus or itching, it is necessary to apply a cooling application; a solution of thymol, 1 to 1,000, is very good. Salicylic acid and menthol are also useful.

- II.
- | | | |
|-----------------------|--------|----|
| Diluted alcohol..... | fl.oz. | 6 |
| Glycerin..... | fl.dr. | 6 |
| Cologne..... | fl.dr. | 6 |
| Tincture benzoin..... | fl.dr. | 3 |
| Salicylic acid..... | gr. | 60 |
| Menthol..... | gr. | 60 |

After applying this, the above powder should be dusted on freely. Continue the cooling treatment (thymol) as long as the active stage continues, and then use a mild ointment containing substances that influence the inflammation, such as the next formula.

- III.
- | | | |
|-------------------------|--------|---------------|
| Cold cream..... | av.oz. | 1 |
| Petrolatum..... | av.oz. | 1 |
| Zinc oxide..... | av.oz. | $\frac{1}{2}$ |
| Bismuth subnitrate..... | gr. | 75 |
| Ichthyol..... | gr. | 50 |
| Carbolic acid..... | drops | 15 |
- Apply twice a day. Used in mild stage.

- IV.
- | | | |
|--------------------|--------|---|
| Zinc oxide..... | av.oz. | 4 |
| Chalk, powder..... | av.oz. | 2 |
| Lead water..... | fl.oz. | 2 |
| Linseed oil..... | fl.oz. | 2 |

Mix the chalk and zinc oxide; emulsify the lead water and linseed oil by shaking together. Finally mix the powders with the emulsion, rubbing constantly until a smooth paste is obtained.

- V.
- | | | |
|--------------------------|--------|---|
| Zinc oxide..... | av.oz. | 2 |
| Sulphur, powder..... | av.oz. | 2 |
| Chalk, precipitated..... | av.oz. | 2 |
| Linseed oil..... | fl.oz. | 2 |
| Lime water..... | fl.oz. | 2 |

Mix the powders together, emulsify the oil and lime water by shaking together, and finally incorporate the mixtures by rubbing until homogeneous.

- VI.
- | | | |
|--------------------|-----|-----|
| Zinc oxide..... | gr. | 15 |
| Talcum powder..... | gr. | 300 |
| Tar..... | gr. | 300 |
| Petrolatum..... | gr. | 300 |

Make into an ointment, and apply to the part morning and night.

- VII.
- | | | |
|-------------------|--------|-----|
| Tar ointment..... | gr. | 60 |
| Cold cream..... | av.oz. | 3 |
| Zinc oxide..... | gr. | 120 |
- Spread on lint and apply.

VIII. Lassar's paste. See Part I.

IX. For other remedies, see under headings "Remedies for Barber's Itch," "Remedies for Itch," and "Ointments or Salves."

Eye, Remedies for Diseases of the.

The public demand for preparations for the eye is not large, but it is quite steady, and the formulas here given will suffice for the ordinary affections. If the condition of the eye seems at all serious or is long continued, the patient should invariably be advised to consult a physician who makes a specialty of ophthalmology.

The remedies for the eye may be either lotions or ointments. Suitable names are the following: "Reliable Eye Salve (or Water)," "White Eye Salve (or Water)," "Standard Eye Salve (or Water)," "Imperial Eye Salve (or Water)," etc.

- I.
Zinc sulphate.....gr. 20
Morphine sulphate.....gr. 20
Rose water.....fl.oz. 4
Distilled water.....fl.oz. 4
Mix, dissolve and filter.

- II.
Boric acid, C. P.....gr. 80
Zinc sulphate.....gr. 8
Morphine sulphate.....gr. 8
Glycerin.....fl.oz. 1
Rose water.....fl.oz. 7
Mix, dissolve and filter.

- III.
Mercuric chloride.....gr. 2
Ammonium chloride.....gr. 12
Cochineal.....gr. 3
Alcohol.....fl.dr. 2
Water, enough to make.....fl.oz. 16
Mix, and filter after 12 hours.

This is known as "Mackenzie's Eye Lotion."

- IV.
Glycerite of hydrastis.....fl.dr. 1
Zinc sulphate.....gr. 8
Morphine sulphate.....gr. 8
Borax.....gr. 15
Glycerin.....fl.oz. 1
Rose water.....fl.oz. 7
Mix, dissolve and filter.

- V.
Zinc oxide.....gr. 5
Morphine sulphate.....gr. 2
Camphor.....gr. 1
White wax.....gr. 120
Lard, fresh.....gr. 860
Oil of rose.....sufficient to flavor

Melt the wax, add the lard, allow to cool, when nearly cold add the camphor, allow it to dissolve, and then incorporate with the other ingredients so as to make a thoroughly smooth ointment.

- VI.
Burnt alum.....gr. 90
Opium, powder.....gr. 60
Olive oil.....fl.dr. 8
Simple cerate.....av.oz. $\frac{3}{4}$

- VII.
Barium chloride.....gr. 6
Calomel.....gr. 10
Simple ointment.....av.oz. 1
Oil of rose.....drop 1
Use in scrofulous ophthalmia.

- VIII.
Yellow mercuric oxide.....gr. 5
Petrolatum.....av.oz. 1
Reduce to a very smooth ointment.

IX. See also Calamine Ointment and Calamine Cerate, Part I.

Feet, Remedies for Perspiration and Fetor of the.

Perspiration and fetor of the feet is a tolerably common complaint, but does not appear to the public to be of sufficient importance to make it necessary to consult a physician. Most remedies recommended by pharmacists are in powder, by reason of the majority of them containing talcum with salicylic acid. These powders should always be exceedingly fine, as otherwise they will prove irritating to the already sensitive integument.

- I.
Salicylic acid.....gr. 105
Boric acid, fine powder.....gr. 350
Talcum, fine powder.....av.oz. 7

This is the "Salicylated Powder of Talcum" of the N. F. The corresponding preparation of the German pharmacopoeia contains powdered starch instead of the boric acid.

- II.
Mercuric chloride.....gr. 1
Sodium salicylate.....av.oz. 1
Prepared chalk.....av.oz. 1

Dust a little of the powder in the socks every morning.

- III.
Zinc oleate, powder.....av.oz. 1
Boric acid, fine powder.....av.oz. 2
Talcum, powder.....av.oz. 8

- IV.
Salicylic acid.....av.oz. $\frac{1}{4}$
Alum, powder.....av.oz. $\frac{1}{2}$
Starch.....av.oz. 2
Oil of bergamot.....drops 54
Alcohol.....fl.dr. 4
Talcum, powder.....av.oz. 7

Dissolve the acid and oil in the alcohol, and rub in mortar with the other ingredients until the alcohol is dissipated.

- V.
Orris, powder.....av.oz. 1
Zinc oxide.....av.oz. 8
Talcum, powder.....av.oz. 6
—D.

- VI.
Salol.....gr. 100
Oil of wintergreen.....drops 50
Talcum, powder.....av.oz. 10
—D.

VII.

Zinc oxide.....	av.oz.	2
Starch.....	av.oz.	2½
Salicylic acid.....	gr.	120
Talcum, powder.....	av.oz.	15
Oil of wintergreen.....	drops	12
—D.		

VIII.

Potassium permanganate.....	gr.	8
Thymol.....	gr.	16
Distilled water.....	fl.oz.	16

Female Disorders, Remedies for.

Remedies for female disorders are of several kinds. Many are uterine tonics (such as Nos. I and II below), these being intended to strengthen or "tone up" organs of gestation to fit woman to endure child bearing with comfort, to prevent, relieve, and cure distressing pains which occur from excessive or tardy menstruation, and to relieve the nervous disorders accompanying these complaints. These preparations are known by such names as "Catholicon," "Woman's Friend," "Female Remedy," "Mother's Friend," "Female Tonic," etc.

No III below is used as a galactagogue to increase the flow of milk in nursing women; No. IV as an anti-galactagogue or anti-lactant to suppress or retard the flow of milk; and Nos. V and VI, as emmenagogues to assist the functions of the womb during or just preceding menstruation.

I.

Fluid extract of squaw vine.....	fl.oz.	4
Fluid extract of cramp bark.....	fl.oz.	2
Fluid extract of blue cohosh.....	fl.oz.	2
Fluid extract of damiana.....	fl.oz.	2
Fluid extract of helonias.....	fl.oz.	2
Fluid extract of cinchona.....	fl.oz.	2
Sherry wine.....	fl.oz.	50

II.

Fluid extract of life root.....	fl.oz.	1
Fluid extract of helonias.....	fl.oz.	1
Fluid extract of black haw.....	fl.oz.	1
Fluid extract of cascarrilla.....	fl.oz.	1
Fluid extract of cascara sagrada.....	fl.dr.	2
Fluid extract of Jamaica dog-wood.....	fl.dr.	6
Fluid extract of rhubarb.....	fl.dr.	4
Alcohol.....	fl.oz.	12
Simple syrup.....	fl.oz.	10
Simple elixir, enough to make.....	fl.oz.	48

III.

Fluid extract of castor oil plant leaves.....	fl.oz.	12
Fennel.....	av.oz.	4
Anise.....	av.oz.	4
Wintergreen herb.....	av.oz.	4
Simple elixir, enough to make.....	fl.oz.	48

Mix the 3 drugs, reduce to coarse powder, and extract by slow percolation, using the elixir as a menstruum. When 36 fluid-ounces of percolate are obtained, add to it the fluid extract.

IV. Make pills, each containing:

Sodium acetate.....	gr.	8
Camphor.....	gr.	1
Potassium nitrate.....	gr.	1

V.

Saccharated carbonate of iron.....	gr.	180
Myrrh.....	gr.	60
Ginger.....	gr.	60
Nutmeg.....	gr.	60

Mix and reduce to fine powder. The dose is 30 gr. taken 3 times daily.

VI.

Myrrh.....	gr.	12
Saffron.....	gr.	3
Oil of clove.....	drop	1

Mix and reduce to fine powder. This is sufficient for 1 dose, to be taken 3 times daily.

Frost-Bite Remedies.

The continued and repeated application of cold upon those portions of the body not well supplied with blood, such as the finger, toes and ears, is liable to produce chilblains or similar disorder; if this application of cold be severe and long continued, the result is frost bite, more or less severe, followed possibly by gangrene (complete destruction of tissue). If the frost bite is only moderately severe, any of the stimulant applications mentioned below will prove beneficial. If it be severe enough so that gangrene may supervene, the patient should be directed to place himself immediately under the care of a trustworthy physician.

I.

Camphor powder.....	gr.	90
Lanolin.....	av.oz.	1
Petrolatum.....	av.oz.	1
Hydrochloric acid.....	fl.dr.	1

To be applied evenings.

- II.
Iodine gr. 60
Ether fl.dr. 10
Collodion fl.oz. 4
Mix and dissolve by agitation.
Apply with a camel's hair brush.
- III.
Tannin gr. 80
Glycerin or spirit of camphor .. fl.oz. 2
- IV.
Peru balsam fl.dr. 1½
Oleobalsamic mixture fl.oz. 1
Cologne fl.oz. 1
Paint on the affected parts.
- V.
Solution of chloride of iron fl.dr. 4
Venice turpentine av.oz. ½
Armenian bole av.oz. ¼
Oil of bergamot m. 40
Petrolatum av.oz. 9
- VI.
Diachylon ointment av.oz. 1
Lanolin av.oz. 1
Cottonseed oil fl.dr. 4
Carbolic acid fl.dr. ½
Oil of lavender drops 15
- VII. Other suitable preparations may be found under the head of "Ointments or Salves" and "Liniments," Part II.

Gonorrhœa, Gleet and Allied Diseases.

Remedies for gonorrhœa may be used externally (so-called) or may be exhibited internally. The external remedies are usually in the form of "injections," or "washes," as they are also termed. These usually contain a zinc salt combined with hydrastis or one of its alkaloids, lead acetate, opium, carbolic acid, or other substance. The remedies for internal use contain copaiba or santal oil or both combined with cubeb, matico, spirit of nitrous ether, gum turpentine, eucalyptus, etc. These internal medicines may take the form of paste, capsules, pills or emulsions. The "external" and "internal" remedies may be used simultaneously, although there is no benefit to be gained by their conjoint use.

The "external" remedies usually are known by some fanciful or odd title, or by a number such as "55," "400," etc. The "internal" remedies are usually known by

such titles as "Sandalwood Pills," "Paste of Copaiba, Cubeb and Santal," "Paste of Copaiba and Santal," "Paste of Copaiba, Cubeb and Matico," "Gonorrhœa Paste," "Confection of Cubeb and Copaiba," "Mass of Copaiba," etc.

Remedies for external use may also be in the form of bougies; one example of these is given among the following formulas.

Every patient suffering with gonorrhœa should be advised to keep the bowels well open and also to refrain from the use of any stimulants during the course of the disease.

- I.
Potassium citrate av.oz. 1
Syrup of citric acid fl.oz. 2
Water, enough to make fl.oz. 8
This is to be taken only in the very first stages of the disease to render the urine alkaline. A tablespoonful is to be taken 3 times daily.
- II.
Berberine hydrochlorate gr. 15
Zinc acetate gr. 15
Glycerin fl.dr. 4
Water, enough to make fl.oz. 8
- III.
Tincture of hydrastis fl.dr. 4
Lime water fl.oz. 8
- IV.
Tannic acid gr. 20
Alum gr. 20
Zinc sulphate gr. 4
Water fl.oz. 8
- V.
Zinc sulphate gr. 10
Lead acetate gr. 10
Compound tincture of catechu .. fl.dr. 1
Tincture of opium fl.dr. 3
Water fl.oz. 8
- VI.
Zinc sulphate gr. 15
Extract of opium gr. 8
Glycerite of hydrastis fl.dr. 2
Glycerin fl.oz. 1
Water, enough to make fl.oz. 8
- VII.
Zinc sulpho-carbolate gr. 15 to 60
Hydrogen peroxide fl.oz. 8
- VIII.
Balsam of copaiba fl.oz. 1
Cubeb, powder av.oz. 1
Matico, powder av.oz. 1
Light magnesia sufficient to form a mass.

IX.

Resin	av.oz.	4
Oil of sandalwood	fl.oz.	5
Calcined magnesia	av.oz.	$\frac{1}{2}$

Melt the resin, add the oil, and stir in the magnesia when nearly cold.

X.

Balsam of copaiba	fl.oz.	8
Yellow wax	av.oz.	4
Cubebs, powder	av.oz.	4
Sandalwood, powder	av.oz.	4
Buchu, powder	av.oz.	2
Colocynth, powder	av.oz.	$\frac{1}{2}$

Melt the wax by the aid of heat, add the copaiba and with the powders form a paste.

XI.

Balsam of copaiba	fl.oz.	$2\frac{1}{2}$
Glycerin	fl.dr.	4
Sugar, powder	av.oz.	$2\frac{1}{4}$
Magnesia (calcined)	av.oz.	$2\frac{1}{2}$
Licorice root, powder	av.oz.	2

Rub up the copaiba and glycerin intimately together, and then add the remaining ingredients gradually in the order named.—D.

XII.

Balsam of copaiba	av.oz.	4
Oil of sandalwood	fl.oz.	1
Gum turpentine	av.oz.	4
Cubeb, powder	sufficient	

Melt the turpentine with the copaiba by the aid of gentle heat, add the oil and incorporate in the melted mass as much of the cubebs as will form a suitable paste.

XIII.

Alum, powder	av.oz.	1
Subcarbonate of iron	av.oz.	4
Cubeb, powder	av.oz.	8
Balsam of copaiba, enough to form a suitable mass or paste		

XIV.

Balsam of copaiba	av.oz.	8
Gum turpentine	av.oz.	8
Oleoresin of cubeb	fl.oz.	1
Alum, powder	av.oz.	1
Extract of licorice, powder	av.oz.	2
Oil of wintergreen, sufficient to flavor suitably.		

Cubeb powder, sufficient to form a suitable mass or paste.

Melt the turpentine at a gentle heat, add the copaiba, add the oleoresin, alum and extract, allow to cool, and then add the oil and cubeb.

XV.

Oil of sandalwood	gr.	800
Yellow wax	gr.	800

Melt the wax at the lowest possible temperature, add the oil, allow to cool, and divide into 100 pills or capsules.

XVI.

Yellow wax	gr.	800
Balsam of copaiba	gr.	800
Oleoresin of cubeb	gr.	100
Iron sulphate, dried	gr.	67
Carbolic acid	drops	88
Extract of belladonna, powder ..	gr.	12
Oil of peppermint	sufficient to flavor	

Melt the wax at the lowest possible temperature, add the balsam, oleoresin, and acid, allow to cool, incorporate the extract, iron salt and oil, and divide into 100 pills or capsules.

Any of the pastes enumerated above may also be converted into pills or capsules.

XVII.

Carbolic acid	drop	1
Zinc acetate	gr.	10
Iron persulphate, powder	gr.	4
Extract of hydrastis	gr.	80
Extract of belladonna	gr.	80
Cacao butter, grated	sufficient	

Convert this mixture into 80 bougies, each 2 inches long and about $\frac{1}{4}$ inch thick. These may be rolled out on a pill tile or pill machine. See Bougies, Part I, for details. These bougies may be advised for gonorrhœa, gleet and spermatorrhœa (nocturnal emissions).

XVIII.

Fluid extract of eucalyptus	fl.oz.	8
Mucilage of acacia	fl.oz.	8
Balsam of copaiba	fl.oz.	8

Mix well by agitation.

XIX.

Balsam of copaiba	fl.oz.	2
Oil of sandalwood	fl.dr.	4
Acacia, powder	gr.	320
Oil of wintergreen	fl.dr.	1
Simple syrup	fl.oz.	4
Water, enough to make	fl.oz.	16

Mix the balsam and two oils and triturate this mixture intimately with the gum; then add all at once 14 fluidrams of water, triturate rapidly until an emulsion is formed, and add the remainder of the water and the syrup.

Gout, Remedies for.

See under Rheumatism and Gout.

Hay Fever Remedies.**I.**

Boraxgr. 60
 Capsicumgr. 45
 Ammonium carbonategr. 80

All in fine powder and to be well mixed.

This is to be insufflated into the nostrils several times daily.

II.

Boric acidgr. 60
 Sodium salicylategr. 75
 Cocaine hydrochlorategr. 4

Make a powder.

This powder is to be insufflated into the nostrils frequently during the day. For the eyes, where affected, a wash of zinc or copper sulphate should be ordered.

III.

Cocaine hydrochloridegr. 6
 Carbolic acidgr. 10
 Mentholgr. 20
 Oil of sweet almondfl.dr. 2
 Zinc ointmentgr. 240

This is to be applied on a cotton pledget.

The cocaine makes the above two formulas dangerous without specific warning against the continued use of the preparations.

Headache Remedies.

Headache remedies are now quite numerous and almost every pharmacist prepares a remedy to replace the "patented" articles. These remedies are usually put up in the form of powders, capsules, wafers, pills and tablets, but the ingredients are practically alike. The common ingredients of these preparations are acetanilid, phenacetin, caffeine, bromides, sodium bicarbonate (to correct acidity of the stomach), etc.

Some of the headache remedies appear in the form of effervescent salts; the ingredients are, however, similar to those of the other remedies.

I.

Acetanilidgr. 7
 Sodium bicarbonategr. 2
 Caffeinegr. 1

Make 1 powder, pill, capsule or tablet.

II.

Phenacetingr. 10
 Caffeinegr. 1

Make 1 powder, pill, capsule or tablet.

III.

Acetanilidgr. 8
 Caffeinegr. 1
 Sodium bromidegr. 7

Make 1 powder, pill, capsule or tablet.

IV.

Acetanilidav.oz. 1
 Sodium salicylategr. 125
 Cerium oxalategr. 65

Mix, make 10 gr. doses, and form into powders, pills, capsules, etc.

V.

Caffeinegr. 20
 Ammonium carbonategr. 20
 Elixir of guaranafl.oz. 1

One fluidram every hour until relieved.

This is suitable for neuralgic headaches.

VI.

Oil of lavender flowersfl.dr. 1
 Camphorav.oz. 1
 Water of ammoniafl.oz. 4
 Alcoholfl.oz. 16

Mix and dissolve. For inhalation and application to the forehead.

VII.

Cerium oxalategr. 192
 Sodium bicarbonategr. 192
 Caffeine citrategr. 48
 Magnesium carbonategr. 48
 Licorice root, powdergr. 96
 Acetanilidav.oz. 1½
 Oil of corianderdrop 1
 Oil of orangedrops 2

Mix intimately, reducing to very fine powder. Divide into 10 gr. powders, wafers or capsules, or make 5 gr. tablets or pills, directing the patient to take 1 of the former or 2 of the latter at a dose.

VIII. The Effervescent Potassium Bromide with Caffeine, Part I, will also be found serviceable.

IX. The latter may also be made with the addition of acetanilid; the product will resemble the different effervescent headache remedies of the market.

Itch, Remedies for.

The disease known as itch, or, more properly, scabies, is a very annoying and tolerably common complaint. It is a parasitic skin disease, and for this reason the mode of treatment is practically the same as for the other skin diseases.

The remedies mentioned below are all to be applied several times daily.

- I.
 Red oxide of mercuryav.oz. 1
 Burgundy pitchav.oz. 1
 Oil of turpentinefl.oz. 1
 Lardav.oz. 16
 Suetav.oz. 16

Melt the pitch, add the suet and lard, mix well, allow to cool, add the oil, and then incorporate thoroughly with the mercury oxide.

- II.
 Sulphurav.oz. $2\frac{1}{2}$
 Birch tar, crudeav.oz. $2\frac{1}{2}$
 Prepared chalkav.oz. $1\frac{1}{4}$
 Green soapav.oz. 5
 Lardav.oz. 5

This is "Hebra's Itch Ointment."

- III.
 Potassium nitrate, powder.....gr. 40
 White hellebore, powder.....av.oz. 1
 Sulphurav.oz. $2\frac{1}{2}$
 Soft soap.....av.oz. $2\frac{1}{2}$
 Lardav.oz. 11

- IV.
 Sulphurated potassa or potassium sulphuret.....gr. 300
 Sodium carbonate.....gr. 120
 Lard.....av.oz. 2
 Soft soap.....av.oz. 2
 Olive oil.....fl.oz. 1

Rub the sulphurated potassa to a very fine powder and mix intimately with the other ingredients.

- V.
 Mentholgr. 110
 Peru balsamav.oz. $\frac{1}{4}$
 Lanolinav.oz. 10

Dissolve the menthol in the lanolin melted at a very gentle heat and incorporate the balsam with this solution.

- VI.
 Sulphurated potassa (sulphuret of potash).....gr. 300
 White soap.....gr. 150
 Lime water.....fl.oz. $12\frac{1}{2}$
 Diluted alcohol.....fl.oz. 8

Make an intimate mixture.

This has been known as "Barton's Lotion."

- VII.
 Ammoniated mercury.....gr. 10
 Lead acetate.....gr. 80
 Sulphur.....gr. 60
 Carbolic aciddrops 10
 Petrolatumgr. 360

VIII.

- Sulphuret of potashgr. 60
 Green soap.....gr. 120
 Waterfl.oz. 8

IX.

- Storaxav.oz. 8
 Olive oilfl.oz. 1
 Alcoholfl.oz. 1

X.

- Sulphurav.oz. 8
 Starch, powder.....av.oz. 8
 Oil of bergamot.....fl.dr. 1

XI.

- Crude petroleumav.oz. 2
 White wax.....av.oz. $1\frac{1}{4}$
 Alcoholfl.oz. 2
 Castile soap.....av.oz. 4

Mix the petroleum, wax and alcohol in a flask until solution has taken place. Then add the soap, continue the heat, until the soap is liquefied, allow to cool and cut into bars or else pour into molds before quite hard. This is essentially a "petroleum soap."

XII. Compound Sulphur Ointment, Part I, is an excellent itch remedy.

XIII. Other remedies enumerated under "Remedies for Barber's Itch," "Eczema Remedies" and "Ointments or Salves," may be employed for the troublesome affection.

Kidney Remedies.

Some years ago preparations for the kidneys were marketed under the name of "Buchu;" there have also been "Diuretic Elixirs," and now these preparations are usually termed "Kidney and Liver Remedies." The latter are therefore to be recommended for affections of the liver, kidney and urinary organs. Many of the remedies for liver complaints may consequently be recommended for kidney affections and conversely many remedies for the kidney may be recommended for the liver.

Kidney remedies need not necessarily be of the liquid form; they may be in the form of coarse powder or species which should be infused with water before using.

I.

Liverwort	av.oz.	1
Hydrangea	av.oz.	1
Scoparius	av.oz.	1
Canadian hemp (apocynum) ..	av.oz.	1
Couch grass	av.oz.	1
Potassium nitrate	gr.	320
Alcohol	fl.oz.	3
Syrupy glucose	fl.oz.	3
Water	sufficient	

Infuse the drugs with hot water so as to make 10 fluidounces of product, and to this add the alcohol and glucose.

Fluid extracts may be substituted for the drugs, in which case the alcohol should be omitted and the amount of water used be reduced to 8 fluidounces.

II.

Liverwort	av.oz.	4
Jamaica dogwood	av.oz.	1
Couch grass	av.oz.	4
Gaultheria	av.oz.	2
Potassium nitrate	av.oz.	1
Alcohol	fl.oz.	32
Glycerin	fl.oz.	12
Water, enough to make	gal.	1

Grind the drugs to coarse powder, percolate with all the glycerin and alcohol mixed with 32 fluidounces of water. When that has all passed add enough hot water to make 1 gallon, add the nitrate of potassium and dissolve.

III.

Fluid extract of buchu	fl.oz.	3
Fluid extract of dandelion	fl.oz.	3
Potassium acetate	av.oz.	3
Fluid extract of juniper berries ..	fl.oz.	2
Fluid extract of pareira	fl.oz.	2
Fluid extract of stone root	fl.oz.	2
Simple elixir, enough to make ..	fl.oz.	32

IV.

Poppy heads, bruised	av.oz.	6
Water	fl.oz.	24
Potassium nitrate	av.oz.	1

Mix the poppy heads and water, boil until the liquid is reduced to about 8 fluidounces, express, adding, if necessary, enough water to make 8 fluidounces and in this dissolve the potassium salt.

Dose: One to 2 teaspoonfuls night and morning.

V.

Buchu	av.oz.	6
Juniper berries	av.oz.	4
Liverwort	av.oz.	2
Hydrangea	av.oz.	2
Potassium acetate	av.oz.	2
Spirit of nitrous ether	fl.oz.	2
Sugar	av.oz.	6
Alcohol	fl.oz.	20
Water, enough to make	fl.oz.	64

Mix the drugs, reduce to coarse powder, moisten with a menstruum consisting of a mixture of the above-mentioned amount of alcohol mixed with 32 fluidounces of water. Then extract by percolation in the usual way, using water as a menstruum when all of the above mixture has been consumed. Allow percolation to cease when 58 fluidounces of percolate have been obtained; in this dissolve the sugar and potassium acetate, and then add the spirit of nitrous ether.

VI. Any of the elixirs containing buchu in Part I may be dispensed as kidney remedies.

VII.

Buchu	av.oz.	8
Uva ursi	av.oz.	8
Juniper berries	av.oz.	4

Make into coarse powder.

VIII.

Chicory	av.oz.	9
Couch grass	av.oz.	2
Senna	av.oz.	2
Red clover	av.oz.	1
Bittersweet	av.oz.	2

All the drugs should be cut tolerably fine and be well mixed.

Liniments.

Liniments are in considerable demand and every pharmacist should have such a preparation ready to offer for sale. Some of these liniments may also be taken internally for cramps, cholera, diarrhoea, etc., and these may be known by such titles as "Pain Cure," "Pain Dispeller," "Pain Expeller," "Rapid Relief," "Pain Killer," etc. Other names which may be employed are "Stimulant Liniment," "Electric Liniment," "Embrocation," "Nerve and Bone Liniment," "Arnica Liniment," "Rheumatic Oil," "Rheumatic Liniment," "Universal Liniment," "Rocky Mountain Liniment,"

"Penetrating Liniment," "Red Oil," "Indian Liniment," "Wizard Liniment," "Wizard Balm," "Golden Oil," "Knickerbocker Liniment," "Bicycle Liniment," etc. If it be white, it might be known as "White Liniment" or "Cream Liniment."

These liniments are recommended for rheumatism, neuralgia, bruises, chilblains, frost bites, sprains, stings and bites of insects, lameness, etc. Many of the preparations may also be employed for veterinary purposes; see also Part IV.

I.

Capsicum, powder.....	gr. 60
Oil of origanum.....	f.dr. 4
Oil of sassafras.....	f.oz. 1
Fusel oil.....	f.dr. 4
Oil of turpentine.....	f.oz. 8
Kerosene oil.....	f.oz. 38

Mix the whole, macerate for 24 hours and strain through muslin.

II.

Spirit of camphor.....	f.oz. 1
Chloroform.....	f.dr. 4
Spirit of ammonia.....	f.dr. 4
Spirit of peppermint.....	f.dr. 4
Tincture of capsicum.....	f.dr. 4
Oil of sassafras.....	f.dr. 4
Oil of turpentine.....	f.oz. 1
Alcohol, enough to make.....	f.oz. 32

III.

Kerosene oil.....	f.oz. 16
Spirit of ammonia.....	f.oz. 6
Spirit of camphor.....	f.oz. 5
Tincture arnica.....	f.oz. 5
Tincture of opium.....	f.oz. 4
Tincture of stramonium.....	f.oz. 4
Oil of origanum.....	f.oz. 4
Chloroform.....	f.oz. 8

IV.

Tobacco, rubbed to powder.....	av.oz. 4
Tincture of arnica.....	f.oz. 24
Soap liniment.....	f.oz. 24

Mix, macerate for 2 or 3 days, agitating occasionally and strain.

V.

Tobacco.....	av.oz. 4
Distilled extract of witch hazel.....	f.oz. 16
Tincture of arnica.....	f.oz. 16
Soap liniment.....	f.oz. 16

Prepare like the preceding.

VI.

Tincture of capsicum.....	f.oz. 8
Water of ammonia.....	f.oz. 8
Soap liniment.....	f.oz. 16

VII.

Oil of tar.....	f.oz. 4
Oil of sassafras.....	f.oz. 1
Carbolic acid, crystal.....	av.oz. 2
Camphor.....	av.oz. 2
Linseed oil, raw.....	f.oz. 32

Melt the acid, add to the oils, then add the camphor and agitate occasionally until dissolved.

VIII.

Oil of hemlock.....	f.dr. 6
Oil of origanum.....	f.dr. 4
Chloroform.....	f.dr. 4
Capsicum, powder.....	av.oz. 2
Benzine.....	f.oz. 30
Oil of turpentine.....	f.oz. 30

Mix, macerate for 24 hours, agitating frequently and strain.

IX.

Tincture of arnica.....	f.oz. 16
Distilled extract of witch hazel.....	f.oz. 16

X.

Oil of origanum.....	f.dr. 3
Oil of sassafras.....	f.dr. 3
Kerosene oil.....	f.dr. 10
Oil of turpentine.....	f.oz. 20
Linseed oil.....	f.oz. 25

XI.

Camphor.....	av.oz. 1½
Oil of turpentine.....	f.oz. 23
Liquid petrolatum.....	f.oz. 20
Oil of origanum.....	f.dr. 4
Carbolic acid.....	f.dr. 4
Ammonia water.....	f.oz. 5
Capsicum, powder.....	av.oz. 3

Mix, macerate for 3 days, agitating occasionally and strain.

XII.

Camphor.....	av.oz. 1
Oil of amber.....	f.oz. 1
Oil of origanum.....	f.oz. 2
Crude petrolatum.....	f.oz. 4
Kerosene oil.....	f.oz. 10
Oil of turpentine.....	f.oz. 16

XIII.

Castile soap, powder.....	av.oz. 2
Oil of origanum.....	f.oz. 2
Oil of turpentine.....	f.oz. 2
Yolks of eggs.....	4
Camphorated oil.....	av.oz. 2
Ammonia water.....	f.oz. 8
Mix. Known as "White Oil."	

XIV.

Capsicum, powder.....	av.oz. 1
Camphorated oil.....	f.oz. 1½
Oil of turpentine.....	f.oz. 16

Let stand for 7 days and filter, beat the filtrate with the contents of 3 eggs—albumen

and yolk—until they are thoroughly mixed, and add:

Acetic acid	f.oz. 2½
Water	f.oz. 16

XV.

Tincture of capsicum	f.oz. 20
Tincture of ginger	f.oz. 20
Tincture of myrrh	f.dr. 10
Tincture of guaiac	f.dr. 18
Tincture of opium	f.oz. 2½
Camphor	av.oz. ½
Alcohol, enough to make	f.oz. 64

Mix and dissolve the camphor by agitation.

XVI.

Oil of camphor (Japanese)	f.oz. 8
Oil of turpentine	f.oz. 40
Benzine, deodorized	f.oz. 16
Cottonseed oil	f.oz. 16
Capsicum, powder	av.oz. 1

Macerate the capsicum with the benzine for 7 days, agitating frequently, and strain. Mix the oils of camphor, turpentine and cottonseed and add the previous liquid.

XVII.

Tincture of cantharides	f.oz. 3
Tincture of myrrh	f.oz. 4
Tincture of guaiac	f.oz. 4
Oil of hemlock	f.oz. 2
Oil of turpentine	f.oz. 8
Cottonseed oil	f.oz. 32
Oil of camphor (Japanese)	f.oz. 16
Water of ammonia, strong	f.oz. 4
Solution of potassa	f.oz. 1

XVIII.

Oil of clove	f.dr. 3
Oil of origanum	f.dr. 4
Spirit of ammonia	f.oz. 4
Ether	f.oz. 4
Alcohol	f.oz. 32

XIX.

The following is similar to certain preparations known by the term "Fluid Lightning:"

Aconitine	gr. 2
Oil of mustard, ethereal	f.dr. 2
Chloroform	f.dr. 2
Ether, stronger	f.oz. 1
Alcohol	enough to make f.oz. 12

The above is a valuable external application for headache, rheumatism, neuralgia, and all nervous pains.

XX.

Any of the liniments of Part I may also be employed.

Liver Remedies.

Remedies for the liver are usually termed "Liver Invigorators" or "Liver Regulators," very frequently "Kidney and Liver Remedies;" in fact most remedies for liver complaints are also recommended for derangements of the kidneys. Some of the liver remedies assume the liquid form, some are in the form of species, some in pill form (see Cathartics), etc. In addition to the formulas here mentioned, some of the blood purifiers, "bitters," cathartics, and kidney remedies may be recommended for assisting the liver in its functions.

I.

Fluid extract of rhubarb	f.oz. 2
Fluid extract of leptandra	f.oz. 2
Fluid extract of podophyllum	f.oz. 2
Compound tincture of gentian	f.oz. 8
Compound tincture of cardamom	f.oz. 4
Tincture of ginger	f.oz. 2
Simple elixir	f.oz. 12

II.

Fluid extract of leptandra	f.oz. 1
Fluid extract of podophyllum	f.oz. 1
Fluid extract of senna	f.oz. 5
Fluid extract of serpentaria	f.oz. 2
Diluted alcohol, enough to make	f.oz. 64

III.

Leptandra, serpentaria, liverwort, senna, butternut, of each	av.oz. 2
Licorice root, anise, of each	av.oz. 1
Mix and reduce to coarse powder.	

Moles, For Removing.

Tartar emetic, fine powder	gr. 30
Soap plaster	dr. 1½
Venice turpentine	dr. ¼

Mix intimately, and spread upon adhesive plaster. Apply firmly to the surface of the mole, and when suppuration sets in, remove.

Nervous Debility, Remedies for.

Of late it has become quite the fashion for the public in general to believe they are suffering from nervous disorders, and many so-called "nervines" have appeared upon the market. Some of these contain celery, others phosphorus and damiana, the latter also frequently containing kola, nux vomica, gentian, cinchona, or columbo.

These preparations may, according to their form or composition, be known as "Celery Compound," "Celery Nervine," "Celery Cordial," "Nerve Tonic," "Vitalizer,"

"Vitalizing Tonic," "Damiana Compound," "Nervous Debility Pills," "Aphrodisiac Elixir," "Aphrodisiac Pills," "Compound Damiana Pills," etc.

I.

Celery seed.....gr. 384
Catnip.....gr. 640
German chamomile.....gr. 384
Simple elixir.....fl. oz. 12
Diluted alcohol.....sufficient

Percolate the mixed and ground drugs with the elixir and then pass enough diluted alcohol through the drug to make 16 fluidounces of product.

II.

Fluid extract of celery seed...fl.dr. 10
Fluid extract of catnip.....fl.dr. 12
Fluid extract of chamomile...fl.dr. 5
Diluted alcohol.....fl.oz. 6
Simple syrup.....fl.oz. 2
Glycerin.....enough to make fl.oz. 16

III

Celery seed.....av.oz. 2
Red cinchona.....av.oz. 1
Orange peel.....av.oz. $\frac{1}{4}$
Coriander seed.....av.oz. $\frac{1}{4}$
Lemon peel.....av.oz. $\frac{1}{4}$
Muriatic acid.....m. 15
Alcohol.....fl.oz. 5
Glycerin.....fl.oz. 4
Water.....fl.oz. 4
Simple syrup.....fl.oz. 4
Diluted alcohol.....sufficient

Mix all the drugs and grind to a moderately coarse powder. Mix the acid, alcohol, glycerin and water; percolate the drug with this mixture, adding enough diluted alcohol to make 12 fluidounces. Add the syrup and if necessary filter. The flavoring may be altered to suit. Some like rose.

IV.

Compound Elixir of Celery. See Part I.

V.

Coca.....av.oz. 8
Damiana.....av.oz. 8
Gentian.....av.oz. 8
Potassium bromide.....av.oz. $1\frac{1}{4}$
Sodium salicylate.....av.oz. 1
Dandelion.....av.oz. 8
Alcohol.....fl.oz. 16
Glycerin,
Water.....of each, sufficient

Mix 32 fluidounces of alcohol and the glycerin with 80 fluidounces of water. Also mix the coca, damiana, gentian, and dandelion, reduce to coarse powder, extract by

percolating the previous mixture through it, in the percolate dissolve the salts, and then if necessary pass enough of the mixture of one volume of alcohol and 3 of water through the mixture to make the entire percolate measure one gallon.

VI.

Nux vomica.....av.oz. 8
Damiana.....av.oz. 8
Gentian.....av.oz. 8
Columbo.....av.oz. 8
Phosphoric acid.....fl.oz. 2
Water,
Alcohol.....of each, sufficient

Mix the nux vomica, damiana, gentian, and columbo in ground form, percolate with a mixture of 1 volume of alcohol and 3 of water so as to obtain 62 fluidounces of percolate and to this add the acid

VII.

Make a mixture of drugs as in the preceding instance, percolate in the same manner, obtaining 56 fluidounces of percolate and to this add $7\frac{1}{2}$ fluidounces of spirit of phosphorus.

VIII. Instead of the preceding, use one of the elixirs of Part I, containing phosphorus, damiana, and nux vomica.

IX.

Celery seed.....av.oz. 4
Kola.....av.oz. $1\frac{1}{2}$
Red clover.....av.oz. 8
Cascara sagrada.....av.oz. 8
Simple syrup.....fl.oz. 16
Alcohol, water, of each.....sufficient

Mix the drugs, reduce to coarse powder, percolate with a mixture of 1 volume of alcohol and 3 of water, to obtain 112 fluidounces, and to the percolate add the syrup.

This combines the "blood-purifying" laxative, and nerve-tonic properties.

X.

Phosphorus.....gr. 1
Extract of damiana.....gr. 200
Extract of nux vomica.....gr. 12
Make into 100 pills.

Neuralgia Remedies.

I.

Menthol.....gr. 45
Cocaine.....gr. 15
Chloral.....gr. 10
Petrolatum.....gr. 300

Apply to painful part, covering with muslin afterwards.

II.

The ointment mentioned under Rheumatism and Gout Remedies will be found serviceable as an anti-neuralgic ointment.

III.

Ipecac.....	gr. 60
Quinine sulphate.....	gr. 100
Strychnine.....	gr. 1
Reduced iron.....	gr. 25

Make into 30 pills.

Label: One pill three times a day.

IV.

Atropine sulphate.....	gr. 1
Morphine sulphate.....	gr. 8
Camphor, powder.....	gr. 120
Chloroform.....	fl.dr. 8
Tincture of cannabis indica.....	fl.dr. 1
Alcohol, enough to make.....	fl.oz. 8

Dose: 30 to 40 drops.

V.

Oil of peppermint.....	fl.oz. 8
Tincture of aconite.....	fl.oz. 4
Chloroform.....	fl.oz. 2

Apply every half hour or every hour.

VI.

Arsenic iodide.....	gr. 1
Extract of belladonna.....	gr. 8
Morphine valerianate.....	gr. 8
Extract of gentian.....	gr. 5
Fluid extract of aconite root.....	drops 5

Make into 60 pills.

Label: Take from 1 to 3 pills in twenty-four hours.

VII.

Chlor. hydrate, camphor, each, av. oz.	1½
Morphine sulphate.....	gr. 20
Atropine sulphate.....	gr. 1
Chloroform.....	fl.oz. 1
Mix. Dose:	10 to 20 drops.

Nipples, Cures for Fissured.

(Mamillary Lotions, Ointments, etc.)

I.

Ichthyol.....	gr. 120
Lanolin.....	gr. 180
Glycerin.....	fl.dr. 8
Olive oil.....	fl.dr. ½

II.

Salicylic acid.....	gr. 30
Tannic acid.....	gr. 8
Borax.....	gr. 60
White wax.....	gr. 120
Lard, benzoinated.....	gr. 360

III.

Salol.....	gr. 60
Cocaine hydrochlorate.....	gr. 2
Ether.....	fl.dr. 1
Collodion.....	fl.dr. 4

IV.

Peru balsam.....	gr. 60
Oil of thyme.....	fl.dr. ½
Yolk of egg.....	1
Water.....	fl.oz. 2
Alcohol.....	fl.oz. 1

Triturate the balsam, oil, and egg yolk together until an emulsion is formed, then add the water and finally the alcohol.

V.

Lead nitrate.....	gr. 10
Rose water.....	fl.oz. 4
Cochineal coloring.....	drops 10

Mix and dissolve.

VI.

To prevent fissuring of the nipples, apply lanolin with the onset of labor four times daily till lactation is established. The nipples are then, after each nursing, anointed with the following:

Compound tincture of benzoin.....	drops 15
Olive oil.....	fl.dr. 2
Lanolin.....	gr. 360

Ointments or Salves.

The ointments mentioned below are useful applications for cuts, burns, ulcers, bruises, bites and stings of insects, frost bites, chilblains, bed sores, etc. Appropriate titles for these preparations are "Household Salve," "Arnica Salve," "Domestic Salve," "Healing Salve," "Carbolic Salve," etc.

Other ointments useful for all parasitic skin diseases may be found under the head of "Remedies for Barber's Itch," "Itch Remedies," and "Eczema Remedies."

I.

Petrolatum.....	av.oz. 16
Yellow wax.....	av.oz. 1½
Camphor.....	av.oz. 1
Carbolic acid, crystal.....	oz. ½
Oil of sassafras.....	drops 30

Melt the carbolic acid and while warm add the camphor and oil of sassafras. Melt the wax and add to it the petrolatum, melting them together; while cooling but still liquid add the solution of camphor in carbolic acid, etc., and stir occasionally while cooling.

The caustic properties of the carbolic acid are neutralized in this preparation by the camphor.

II.

White wax.....	av.oz.	4
Lard.....	av.oz.	12
Carbolic acid, crystal.....	av.oz.	$\frac{1}{4}$
Calomel.....	gr.	240
Camphor.....	gr.	60

Prepare this like the preceding, thoroughly incorporating the calomel by frequent stirring until the ointment is almost solid.

III.

Solid extract of arnica.....	gr.	120
Lard.....	av.oz.	$14\frac{1}{2}$
Yellow wax.....	av.oz.	$1\frac{1}{2}$
Hot water.....	sufficient	

Dissolve the extract of arnica in the hot water, and thoroughly incorporate it with the lard and beeswax previously melted together.

IV.

Yellow wax.....	av.oz.	$1\frac{1}{4}$
Petrolatum.....	av.oz.	$14\frac{1}{2}$
Arnica flowers.....	av.oz.	4

Melt the wax, add the petrolatum, stir in the flowers, heat moderately for one hour, stirring frequently; strain and allow to cool.

V.

Simple cerate or simple ointment.....	av.oz.	15
Boric acid.....	av.oz.	1

Make an intimate mixture.

VI.

Yellow wax.....	av.oz.	2
Petrolatum.....	av.oz.	16
Thymol.....	av.oz.	1

Melt the wax, add the petrolatum, and then stir in the thymol.

Pile Remedies.

Piles, or hemorrhoids, as they are more correctly termed, are a very common and very annoying affection. They are termed "internal" piles when they exist within the sphincter controlling the muscles of the anus, and "external" piles when existing outside of this sphincter. Other terms also are used in describing them: Blind piles which are simply a varicose state of the veins without bleeding; itching piles, bleeding piles, which

are accompanied by loss of blood at every evacuation, and mucous piles, when pus or mucus only is discharged.

Treatment of piles should be both constitutional and local. The constitutional treatment should consist of the taking of compound licorice powder or one of the "bitter waters" at night. For local treatment, a mixture of an astringent like nutgall, tannin, extract of witch hazel, extract of krameria, lead acetate or iron subsulphate, with an anodyne like opium, belladonna, conium, tobacco, stramonium, ergot, or morphine is considered advisable. Other agents sometimes added to this mixture are antiseptics like iodoform, tar, peru balsam, carbolic acid, betanaphthol or salol. This mixture may assume the form of an ointment or of suppositories. The former should be preferred for external, the latter for internal, piles. When the piles are only tolerably severe, these remedies afford prompt relief, but when quite severe, only surgical intervention will effect a cure.

I.

Fluid extract of witch hazel....	fl.oz.	1
Peru balsam.....	gr.	120
Fenugreek.....	av.oz.	1
Petrolatum.....	av.oz.	16
Paraffin.....	av.oz.	4

Melt the petrolatum with gentle heat and macerate therein the fenugreek, for half an hour; then add the paraffin and strain through cloth. When about to solidify, add the extract of witch hazel to which the balsam has been added, stir until cool.

II.

Nutgall, fine powder.....	av.oz.	$\frac{3}{4}$
Opium, fine powder.....	gr.	90
Lard, fresh.....	av.oz.	6

III.

Morphine sulphate.....	gr.	2
Olive oil.....	fl.dr.	2
Zinc ointment.....	av.oz.	1
Nutgall, fine powder.....	gr.	120

IV.

Chrysarobin.....	gr.	24
Iodoform.....	gr.	10
Extract of belladonna.....	gr.	18
Petrolatum.....	gr.	480

Before applying wash the parts with a 2 per cent carbolic acid solution.

V.	
Bethanaphthol	gr. 10
Extract of ergot	gr. 20
Extract of belladonna	gr. 20
Lead acetate	gr. 50
Opium, powder	gr. 50
Simple ointment	gr. 250

VI.	
Lead acetate	gr. 15
Extract of conium	gr. 45
Crocatad tincture of opium	drops 10
Peru balsam	gr. 45
Simple cerate	gr. 875

—H.

This is known as "Hellmund's Narcotico-balsamic Ointment."

VII.	
Iron persulphate, powder	gr. 40
Lard	av.oz. 1
Oil of bitter almond	drops 2

VIII.	
Extract of belladonna	gr. 1½
Antipyrin	gr. 24
Salol	gr. 24
Cacao butter	sufficient
Make into 12 suppositories.	

IX.	
Cocaine hydrochlorate	gr. 8
Oil of eucalyptus	m. 12
Extract of krameria	dr. 2
Cacao butter	sufficient
Make the following into 12 suppositories:	

X.	
Extract of belladonna	gr. 1½
Iodoform	(gr. 12 to) gr. 24
Chrysarobin	gr. 12
Cacao butter	sufficient

X a.	
Extract of belladonna	gr. 6
Tannic (or gallic) acid	gr. 24
Cacao butter	sufficient

XI.	
Hydrastin	gr. 6
Ergotin	gr. 6
Hamamelin	gr. 6
Opium	gr. 6
Tannin	gr. 12
Cacao butter	sufficient

XII.	
Iron subsulphate	gr. 36
Morphine sulphate	gr. 5
Iodoform	gr. 3½
Cacao butter	sufficient

XIII.	
Tannin	gr. 36
Morphine sulphate	gr. 4
Potassium iodide	gr. 24
Cacao butter	sufficient

Make into 12 suppositories.

XIV.	
Iodoform	gr. 30
Extract of belladonna	gr. 3
Morphine sulphate	gr. 1½
Cacao butter	gr. 180

Make into 12 suppositories.

XV.	
Iodoform	gr. 60
Peru balsam	gr. 120
Cacao butter	gr. 90
White wax	gr. 90
Calcined magnesia	gr. 60

Make into 12 suppositories.

One of these should be introduced after each evacuation.

XVI.	
Extract of witch hazel	gr. 60
Tannin	gr. 12
Opium, powder	gr. 4
Cacao butter	gr. 180

Make into 12 suppositories.

Rheumatism and Gout Remedies.

Rheumatic remedies may consist of remedies for internal or for external use. Those for internal use are to be preferred as affording better results, but the effects are still more marked if accompanied by the use of a suitable application (liniment).

Rheumatism remedies are usually also recommended for gout. The remedies for the external treatment of gout may consist of liniments or ointments; an example of a suitable gout ointment is mentioned below. (See also Liniments, in Part II.)

I.

Potassium iodide	gr. 240
Potassium bromide	gr. 240
Wine of colchicum seed	fl.oz. 1
Syrup of orange or sarsaparilla	fl.oz. 2
Water	fl.oz. 5

Directions: A teaspoonful 3, 4 or 5 times a day.

II.

Salicylic acid	gr. 150
Potassium citrate	gr. 800
Glycerin	fl.oz. 2
Simple elixir	fl.oz. 4

Mix and dissolve by agitation.

III.

Potassium acetate.....	gr. 60
Sodium salicylate.....	gr. 480
Water	f.oz. 2
Simple syrup	f.oz. 2

IV.

Sodium salicylate.....	av.oz. 6
Fluid extract of colchicum seed.....	f.oz. 1½
Fluid extract of black cohosh.....	f.oz. 8
Potassium acetate	f.oz. 4
Oil of wintergreen.....	f.dr. ½
Alcohol	f.dr. 4
Simple syrup.....	f.oz. 8
Water, enough to make.....	f.oz. 48

Dissolve the oil in the alcohol, add the fluid extracts, then the other ingredients, and dissolve by agitation.

V.

Sodium salicylate.....	gr. 860
Spirit of nitrous ether.....	gr. 860
Glycerin	f.dr. 12
Camphor water, enough to make.....	f.oz. 8

Dose: A tablespoonful three times a day.

VI.

Sodium salicylate.....	gr. 120
Potassium iodide.....	gr. 120
Potassium acetate.....	gr. 120
Fluid extract of cascara sagrada.....	f.dr. 4
Glycerin	f.dr. 4
Cinnamon water.....	f.dr. 4
Peppermint water, enough to make.....	f.oz. 8

Label: A teaspoonful every 8 hours.

The following are intended especially for gout:

VII.

Menthol	gr. 400
Chloroform, enough to make.....	f.oz. 8

Mix and dissolve. To be applied externally.

VIII.

Rhubarb	av.oz. 1
Senna.....	av.oz. 1
Coriander	av.oz. 1
Fennel	av.oz. 1
Licorice root.....	av.oz. ½
Saffron.....	av.oz. ½
Raisins	av.oz. 20
Diluted alcohol.....	pts. 8

Macerate for 14 days, express, and filter.

Dose: 1 to 8 tablespoonfuls daily.

IX.

Veratrine	gr. 15
Alcohol	f.dr. ½
Lanolin	av.oz. 1
Petrolatum	av.oz. 1
Oil of bergamot	f.dr. 1
White oil of thyme	f.dr. 1

Dissolve the veratrine in the alcohol, add the other ingredients, and mix well.—H.

To be applied night and morning.

X. Many of the liniments may be employed externally for the relief of rheumatic pains; some of the "blood purifiers" and possibly some of the "bitters" may be recommended for the cure of rheumatism.

Ringworm, Applications for.

I.

Naphthalin	gr. 60
Ointment of carbolic acid.....	av.oz. 2

II.

Salicylic acid.....	gr. 120
Lanolin	av.oz. ½
Lard.....	av.oz. ½

Apply night and morning.

III.

A more effective application than the latter is a saturated solution of salicylic acid in collodion. For a time this application may be quite painful.

IV.

Mercuric chloride.....	gr. 2
Compound tincture of benzoin.....	f.oz. 1

Mix and dissolve. Paint over the affected parts.

V.

Aromatic sulphuric acid.....	f.oz. 1
Spirit of nitrous ether.....	f.oz. 1
Creosote.....	f.oz. 1

Apply once a day.

VI.

Goa powder.....	gr. 12
Lard.....	av.oz. 1

Apply freely to part affected.

Instead of goa powder a corresponding amount of chrysophanic acid may be employed.

Soothing and Teething Remedies.

These preparations usually have a title like "Baby Soothing Syrup," "Anise Soothing Drops," "Infant Teething Syrup,"

"Baby Soother," "Teething Powders," etc. Most of the proprietary preparations of this kind depend for their "soothing" effect upon opium; others are simply carminative, depending for their value upon anise, sometimes combined with fennel, ginger, lactucarium, lupulin, etc. Inasmuch as the effects of opium are so pernicious, especially upon infants, it is best to refrain from giving formulas containing this agent or its chief alkaloid. There is also the disadvantage, with the use of opium, that it obscures the real difficulty; the infant may be suffering from a vital or dangerous disease which will result fatally if not properly treated by a competent physician.

In addition to the formulas for soothing remedies to be administered internally, there are given two others for application to the gums during dentition.

I.	
Anise.....	gr. 540
Fennel.....	gr. 230
Caraway.....	gr. 230
Ginger.....	gr. 25
Lactucarium.....	gr. 30
Lupulin.....	gr. 120
Diluted alcohol.....	sufficient
Simple syrup.....	fl.oz. 21

Mix the drugs, reduce to powder, percolate with diluted alcohol so as to obtain 9 fluid-ounces of product and to this add the syrup.

II.	
Anise, bruised.....	av.oz. 1½
Alcohol.....	fl.oz. 4
Simple syrup.....	fl.oz. 6
Anise water, enough to make.....	fl.oz. 16

Macerate the anise in the alcohol for 5 days, filter, and to the filtrate add the remaining drugs.

III.	
Anise.....	av.oz. 1¼
Fennel.....	av.oz. ½
Lactucarium.....	gr. 25
Hops.....	gr. 120
Diluted alcohol.....	fl.oz. 9
Simple syrup, enough to make.....	fl.oz. 80

Mix the drugs, reduce to powder, percolate with the diluted alcohol, and add the syrup.

IV.

Anethol.....	drops 50
Oil of fennel.....	drops 10
Alcohol.....	fl.oz. 7½
Water.....	fl.oz. 3½
Simple syrup.....	fl.oz. 14
Purified talcum.....	sufficient

Dissolve the oil and the anethol in the alcohol, add to a mixture of the syrup and water, let stand a few hours, and filter through talcum.

V.

Ammonium bromide.....	gr. 960
Chloroform.....	fl.dr. 2
Fluid extract of conium.....	fl.dr. 2
Tincture of henbane.....	fl.dr. 4
Syrup of glucose.....	fl.oz. 8
Water, enough to make.....	fl.oz. 16

VI.

Make powders, each containing	
Pepsin, saccharated.....	gr. 5
Charcoal.....	gr. ½
Magnesium carbonate.....	gr. 1
Lactucarium.....	gr. ⅙

Syphilis Remedies.

The recommending of remedies for the use of syphilitics does not come within the province of the pharmacist. The formula below, known as the "Hot Springs Prescription," is given merely because of its more or less extended use. Other remedies which may prove useful are the "blood purifiers" containing potassium iodide.

Potassium iodide.....	gr. 480
Iodine.....	gr. 2
Mercuric chloride.....	gr. 3
Compound tincture of gentian.....	fl.oz. 2
Fluid extract of senna.....	fl.oz. 1
Compound syrup of sarsaparilla.....	fl.oz. 8
Water enough to make.....	fl.oz. 16

Throat Affections, Remedies for.

Under this heading will be mentioned such preparations as could not conveniently be classed under Cough and Cold Remedies.

I.

Morphine sulphate.....	gr. 10
Ipecac.....	gr. 40
Ginger.....	gr. 40
Tartaric acid.....	gr. 80
Oil of anise.....	gr. 20
Sugar.....	av.oz. 16

Mix all the dry ingredients, which should be in very fine powder, add the oil, mix again, pass through a fine sieve, and convert

into a lozenge mass by adding a small amount of mucilage of acacia or of gum tragacanth, and then sufficient water. Roll the mass out and divide into lozenges of suitable size, spread these out on boards or trays in a warm place and when nearly dry turn them over and allow them to dry on the other side.

The above forms a good Expectorant Cough Lozenge.

II.

Cubebs.....	gr. 140
Potassium chlorate.....	gr. 280
Extract of licorice.....	gr. 150
Sugar.....	av.oz. 16
Pine tar.....	gr. 20

Mix the cubeb, potassium chlorate, and sugar, all in fine powder; add the powder, which may be either in powder or plastic form, then the tar, make into a mass like the preceding, divide into lozenges and dry as before.

These lozenges have enjoyed some reputation under the name of "Pine Tree Tar Lozenges." The licorice, cubeb and tar act as an expectorant and the potassium chlorate is intended to relieve soreness of the throat.

III.

Fluid extract of pyrethrum.....	m. $\frac{3}{4}$
Pilocarpine hydrochlorate.....	gr. 100
Extract of licorice.....	gr. 2
Glycerin.....	m. 1
Sugar, enough to make.....	gr. 20

This is sufficient for one lozenge, which should be prepared like the preceding.

These lozenges give great relief from the uncomfortable sensations of heat and dryness which characterize many acute and chronic affections of the mucous membrane of the mouth and throat. The lozenge should be allowed to dissolve in the mouth, and one used every two, three or four hours, as necessary. The addition of 2 grains of ammonium chloride will often be beneficial in sub-acute inflammatory conditions of the mucous lining of the respiratory tract, while in more chronic affections 2 or 3 minims of the oleoresin of cubebs will serve a good purpose.

IV.

Cubebs.....	av.oz. 1
Benzoic acid.....	gr. 140
Extract of licorice.....	av.oz. $2\frac{1}{4}$
Tragacanth.....	gr. 10
Morphine muriate.....	gr. 6
Sugar.....	av.oz. 1
Oil of anise.....	drops 80
Currant jelly.....	av.oz. 10

Mix all of the solids above, previously reduced to fine powder, add the oil and the jelly, form into a mass (by the addition of water or mucilage if necessary), roll this out like a thin pill pipe, and cut into troches weighing about 10 gr. each.

These lozenges are excellent for hoarseness and for coughs and colds.

V.

Sodium salicylate.....	f.dr. 8
Fluid extract of cascara sagrada.....	f.dr. 2
Glycerin.....	f.dr. 2
Orange flower water, enough to make.....	f.oz. 2

Label: A teaspoonful every 3 or 4 hours.

This is excellent for tonsillitis.

VI.

Oil of peppermint.....	drops 8
Carbolic acid.....	f.dr. 1
Alcohol.....	f.dr. 2

Use 10 drops in a cup of warm water, morning and evening, as a gargle. This is an excellent remedy for quinsy.

Tonics.

A variety of preparations known by this title is grouped under this heading. Other tonic preparations may be found under the heading Bitters.

I.

Solution of iron "protoxide".....	f.oz. 2
Fluid extract of cinchona.....	f.oz. 4
Sodium phosphate.....	av.oz. 1
Tincture of nux vomica.....	f.dr. 2
Fluid extract of senna.....	f.oz. 1
Water, hot.....	f.oz. 2
Simple elixir, enough to make.....	f.oz. 16

Dissolve the sodium phosphate in the water, add the other ingredients, let stand for 24 hours, and filter. This may be known as "Iron Tonic Syrup."

II.

Fluid extract of gentian.....	f.oz. 1
Fluid extract of dandelion.....	f.oz. 1½
Phosphoric acid, diluted.....	f.dr. 10
Glycerin.....	f.oz. 8
Sherry wine.....	f.oz. 8
Simple syrup.....	f.oz. 4
Compound tincture of cardamom.....	f.dr. 6
Mix and filter.	

III.

Tincture of cinchona.....	f.oz. 2
Compound tincture of gentian.....	f.oz. 1
Tincture of capsicum.....	f.dr. 1
Fluid extract of hydrastis.....	f.dr. 2
Simple elixir, enough to make.....	f.oz. 16
Mix, let stand a few hours, and filter.	

IV.

Soluble tincture of ginger	
(Part IV.).....	f.oz. 4
Compound tincture of gentian.....	f.oz. 2
Glycerite of hydrastis.....	f.dr. 2
Sugar.....	av.oz. 2
Alcohol.....	f.oz. 5
Water.....	f.oz. 5
Mix, dissolve by agitation, and filter.	
This may be known as "Ginger Tonic."	

V.

Hops.....	av.oz. 4
Dandelion.....	av.oz. 1½
Podophyllum.....	av.oz. ½
Buchu.....	av.oz. 1
Water, boiling.....	gal. 1
Alcohol.....	f.oz. 16

Mix the drugs, reduce to coarse powder, pour on the water, let stand for 12 hours, decant 7 pints of clear liquid and to this add the alcohol.

This preparation has been known as "Hop Tonic."

VI.

Cinchona.....	av.oz. 1½
Bitter orange peel.....	av.oz. 1½
Wild cherry bark.....	gr. 100
Cinnamon.....	gr. 60
Calamus.....	gr. 30
Simple syrup.....	f.oz. 11
Alcohol,	
Water, of each enough to make.....	f.oz. 32

Reduce the solids to a coarse powder, and percolate with a menstruum consisting of 2 volumes of alcohol and 1 volume of water until 21 fluidounces of percolate is obtained. Add the syrup, let stand a few days, then filter.

This preparation may be known as "Cali-saya Tonic."

VII.

Compound tincture of gentian.....	f.oz. 2
Syrup of coffee.....	f.oz. 8
Simple elixir.....	f.oz. 6

Toe-Nail, Ingrowing.

Liquefied chloride of lime.
Apply one drop at night.

Toothache Remedies.

Formerly all toothache remedies were prepared in the liquid form—"toothache drops" they were termed. Several years ago, pills or pellets, each for one insertion into the cavity of the tooth, came into use. These have been succeeded lately by pencils or sticks, called "toothache wax" or "toothache gum," which have become very popular. These consist of a fatty body like yellow or white wax or spermaceti with which is incorporated carbolic acid, creosote, chloral hydrate, camphor, etc. This is then formed into small sticks or pencils, or else absorbent cotton is saturated with this mixture, and this is then cut into suitable pieces and formed into similar sticks. A formula for an odontalgic cement is also given.

Inasmuch as the public rarely asks for a proprietary toothache remedy, the pharmacist can always "push" his own article; he may even find it advantageous to have several kinds of toothache remedies prepared ready for sale.

I.

Morphine.....	gr. 60
Acetic acid.....	f.dr. 2
Alcohol.....	f.oz. 3
Chloroform.....	f.oz. 7

Dissolve the alkaloid in the acid, add the alcohol, and then the chloroform.—H.

II.

Camphor.....	av.oz. 2
Oil of cajuput.....	f.oz. 4
Chloroform.....	f.oz. 5
Oil of clove.....	f.dr. 2

Mix and dissolve by agitation.—H.

III.

Oil of clove.....	f.oz. 2
Spirit of ether.....	f.oz. 6
Tincture of opium.....	f.oz. 8

—H

- IV.
 Chloral hydrate.....av.oz. $\frac{1}{2}$
 Camphor.....av.oz. $\frac{1}{2}$
 Morphine sulphate.....gr. 8
 Peppermint oil.....fl.oz. 11
 Rub the solids in a mortar until liquefied
 and add the oil.

- V.
 Creosote.....fl.oz. 2
 Chloroform.....fl.oz. 2
 Alcohol.....fl.oz. 2
 Spirit of soap.....fl.oz. 2

- VI.
 Morphine.....gr. 8 to 6
 Oil of peppermint.....fl.dr. $\frac{1}{2}$
 Carbolic acid.....fl.dr. 2
 Collodion.....fl.dr. 6

- VII.
 Camphor.....av.oz. 1
 Chloral hydrate.....av.oz. 1
 Chloroform.....fl.oz. 1
 Ether.....fl.oz. 1
 Tincture of opium.....fl.dr. 4
 Oil of thyme.....fl.dr. 4
 Oil of saffrafas.....fl.dr. 4
 Alcohol, enough to make.....fl.oz. 16

- VIII.
 Creosote.....drops 60
 Oil of cloves.....drops 16
 Oil of cinnamon.....drops 16
 Alcohol.....fl.oz. 1

Directions: Put one drop on a pledget of absorbent cotton and apply.

- IX.
 Camphor.....gr. 60
 Peru balsam.....gr. 60
 Extract of opium.....gr. 60
 Mastic.....gr. 120
 Chloroform.....fl.oz. $2\frac{1}{2}$

- X.
 White or yellow wax.....av.oz. 3
 Venice turpentine.....av.oz. $1\frac{1}{2}$
 Mastic, powder.....av.oz. $\frac{1}{2}$
 Opium, powder.....gr. 180
 Chloral hydrate.....gr. 110

Melt the first three together, then add the other ingredients, and stir frequently while cooling.

- XI.
 Salicylic acid.....gr. 10
 Opium powder.....gr. 5
 Oil of clove.....gr. 10
 Oil of cajuput.....gr. 20
 Mastic.....gr. 20
 Dragon's blood.....gr. 20
 Venice turpentine.....gr. 20
 Yellow wax.....gr. 120

Melt together and mix at a moderate temperature, roll out into little rods, cover with

wax paper or tinfoil, and preserve in well closed vials.

- XII.
 Iodol.....gr. 15
 Paraffin oil.....gr. 10
 Venice turpentine.....gr. 10
 Yellow wax.....gr. 65
 Alkanet root.....sufficient to color

Triturate together the iodol, venice turpentine, and paraffin oil, then add to the melted wax colored with the alkanet. Salol may be substituted for the iodol.

- XIII.
 Mastic.....av.oz. 2
 Oil of clove.....fl.dr. 4
 Carbon bisulphide.....fl.oz. 5
 Amber, powder.....av.oz. 1
 Opium, powder.....av.oz. 1
 Tannin, powder.....av.oz. $\frac{1}{4}$

Dissolve the mastic in the bisulphide of carbon, and add the oil of clove and the powders previously mixed.

- XIV.
 Paraffin.....gr. 180
 Burgundy pitch.....gr. 180
 Oil of cloves.....fl.dr. 1
 Carbolic acid.....fl.dr. 1

Melt the paraffin and pitch together and add the other ingredients when nearly cold, and make mass into pills, cones or mix with cotton and cut into strips.

- XV.
 Oil of clove.....fl.dr. 2
 Carbolic acid, crystal.....av.oz. 6
 Yellow beeswax.....av.oz. 1

While still liquid immerse thin layers of absorbent cotton and when sufficiently cool roll them into the shape of rods. For use, snip off a little piece, warm it gently, and introduce into the hollow tooth.

- XVI.
 White wax or spermaceti.....av.oz. 1
 Carbolic acid, crystal.....av.oz. $\frac{1}{2}$
 Chloral hydrate.....av.oz. 1

Melt the fat at a gentle heat, add the acid and chloral, stir until dissolved, and immerse cotton in the mixture as in the preceding instance.

XVII.

Cocaine hydrochlorate	gr. 16
Opium, powder	gr. 64
Menthol	gr. 16
Althæa, powdered	gr. 48
Mucilage of acacia	sufficient

Make into one-half grain pills and keep in well-stoppered vials. For use, one of these is to be inserted into the hollow tooth.—D.

XVIII.

Opium, powder	gr. 15
Belladonna root, powder	gr. 15
Pyrethrum root, powder	gr. 15
Oil of clove	drops 8
Oil of cajuput	drops 8
Oil of sweet almonds	drops 8
Yellow wax	gr. 20

After melting together and allowing to cool form the mass into 100 pills which are sprinkled over with clove powder and properly preserved.

XIX.

Opium, powder	gr. 60
Pyrethrum root, powder	gr. 30
Creosote	sufficient to form a mass

Make into pellets weighing about one-half grain each.

XX.

Tannin	gr. 40
Opium, powder	gr. 80
Amber	gr. 80
Mastic	gr. 160
Oil of clove	40
Carbon disulphide	f. dr. 5½

After dissolving the mastic in the carbon disulphide add the previously mixed powders.—D.

Chloroform may be substituted for the carbon disulphide, but the latter acts as an instantaneous analgesic, while its odor is marked by the clove oil.

This mixture should be inclosed in a well-stoppered wide-mouth bottle. For use, take out a small portion and insert into the carious teeth.

Vermifuges.

Pharmacists are very frequently asked to recommend some remedy for the expulsion of worms in children. The various vermifuges are of different forms, such as syrup, solution, lozenge, powder, species and electuary. These may be entitled "Pleasant Worm Syrup,"

"Santonin Worm Lozenges," "Chocolate Worm Syrup," "Tonic Vermifuge," "Ideal Worm Powders," etc. An almost universal ingredient of these preparations is santonin; other common ingredients are oil or fluid extract of wormseed and pink root. These are usually combined with some purgative, such as castor oil, buckthorn, rhubarb, calomel, podophyllin, senna and jalap resin. Another addition sometimes made is some carminative like anise or fennel or the volatile oils of either of these.

The above described remedies are intended only for pin worms and lumbricoid worms. Tapeworms usually infest adult persons and require much different treatment. Formulas serviceable against the latter are also appended.

I.

Fluid extract of spigelia	f. oz. 5
Fluid extract of senna	f. oz. 3
Oil of anise	drops 10
Oil of caraway	drops 10
Simple syrup	f. oz. 8

Dose, 1 or more teaspoonfuls at intervals until purging commences.

This formula is that of the old and familiar "compound fluid extract senna and spigelia," reduced one-half by the addition of syrup.

II.

Santonica, fine powder	av. oz. 1
Fluid extract of spigelia	f. oz. 3
Fluid extract of senna	f. oz. 3
Oil of chenopodium	drops 10
Oil of anise	drops 10
Oil of caraway	drops 10
Oil of fennel	drops 10
Syrupy glucose, enough to make	f. oz. 16

III.

Fluid extract of spigelia	f. dr. 4
Fluid extract of senna	f. dr. 4
Fluid extract of buckthorn	f. oz. 1
Santonin	gr. 40
Alcohol	f. oz. 4
Cacao, powder	av. oz. 1
Simple syrup, enough to make	f. oz. 40

Make the cacao into a smooth paste with a portion of the syrup, heat to boiling, allow to cool, dissolve the santonin in the alcohol, add the fluid extracts, then the chocolate syrup and the remainder of the syrup, and mix the whole by agitation.

IV.

Santonin ..	gr. 80
Alcohol	fl.oz. 15
Oil of chenopodium.....	fl.oz. 1
Fluid extract of chenopodium..	fl.dr. 4
Castor oil	fl.oz. 24

Dissolve the santonin in the alcohol, add this solution to a mixture of the two oils, and to the whole add the fluid extract.

V. Powders may be prepared, each containing santonin, gr. 1, calomel, gr. 1, podophyllin, gr. 1-12 and sugar, gr. 30. The calomel may be omitted and the podophyllin increased to $\frac{1}{6}$ gr., or either may be replaced by resin of jalap.

VI.

Santonin.....	gr. 50
Sugar, fine powder.....	av.oz. 4
Tragacanth, fine powder.....	gr. 50
Orange flower water.....	sufficient

Triturate the santonin to fine powder, add the tragacanth and sugar, mix well, make into a mass with the water, and divide into 100 lozenges. These are the "troches of santonin" of the U. S. P. Plain water may be substituted for the orange flower water.

The dose for a child 1 year old is 1 lozenge night and morning; of 2 years, 2 lozenges; of 4 years, 3; of 8 years, 4; of 10 years or more, 5 to 7 lozenges; in all cases to be taken twice daily, and continuing until worms are evacuated.

VII. To the preceding mass may be added podophyllin, calomel or resin of jalap; they may be colored pink with solution of carmine, cochineal color, or tincture of cudbear; or in place of the latter, powdered cacao or chocolate may be added.

The lozenges may be flavored with anise, fennel, wintergreen, or other flavor, and the gum tragacanth may be replaced by acacia.

VIII.

Spigelia	av.oz. 4
Manna	av.oz. 4
Senna.....	av.oz. 2
Fennel	av.oz. 1

Cut the spigelia and senna, bruise the fennel, mix, add the manna and reduce the whole to a uniformly coarse powder.

In using, the above amount is sufficient for 7 pints of infusion or "tea," of which

half a teacupful is to be given to a child 2 years old morning, noon and night before eating.

IX.

Spigelia	av.oz. 6
Savin.....	av.oz. 1
Senna	av.oz. 2
Cream of tartar.....	av.oz. 2
Rhubarb.....	av.oz. $\frac{1}{2}$
Fennel	av.oz. 4
Wormseed	av.oz. 2

Mix and reduce to coarse powder.

X.

Extract of licorice, pure or purified	av.oz. $\frac{1}{2}$
Honey	av.oz. 2
Tamarind pulp, purified	av.oz. $2\frac{1}{2}$
Jalap, powder.....	av.oz. $\frac{1}{2}$
Santonica, powder	av.oz. 2
Male fern, powder.....	av.oz. 2

Mix the first 3 substances and add the powders.—D.

The subjoined mixtures are intended for the destruction and expulsion of tapeworms:

XI.

Oleoresin of male fern	drops 80
Pelletierine tannate.....	gr. 1
Glycerin.....	fl.dr. 4

The whole is to be taken in a liberal quantity of sweet milk immediately upon arising in the morning.

XII.

Oleoresin of aspidium.....	gr. 120
Calomel	gr. 5

Divide into 16 capsules.

Early in the morning, 1 capsule every 5 minutes, in a tablespoonful of sweetened water:

XIII.

The addition of the chloroform is said greatly to increase the efficacy of oleoresin of male fern. This is of practical value, as grave symptoms of poisoning have been observed after the ingestion of large doses of male fern. The following will prove of benefit:

Oleoresin of male fern	gr. 20
Chloroform	m. 40
Castor oil	fl.dr. $1\frac{1}{2}$
Croton oil.....	drops 3

This is sufficient for one treatment.

XIV.

Granatum, coarse powder.....	av.oz. 2
Water	sufficient
Castor oil	fl.oz. 1
Acacia, powder.....	av.oz. ½
Syrup of licorice	fl.oz. 1

Mix the bark with 8 fluidounces of water, macerate for 10 hours, then heat on a water bath for 2 hours, express, heat the residue as before for 2 hours with 7 fluidounces of water, express again, mix the two liquids, evaporate them on a water bath to 4½ fluidounces, make an emulsion with this and the oil and gum, and finally add the syrup.—D.

An adult is to take one-half of this mixture upon arising, subsequently taking a cup of coffee or tea, and following in one-half hour with the remainder of the mixture.

XV.

Pumpkin seeds, deprived of the outer membrane	av.oz. 1
Water	fl.dr. 1
Honey	av.oz. 1

Beat the seed and water together in a mortar to a uniform paste, then add the honey gradually, mixing the whole well.—D.

The above is recommended for tapeworm in children. No previous fasting is required. In the morning upon arising, the child is to drink a glass of milk; follow this in 1 hour by one-half of the electuary, in 15 minutes the other half, and follow in another 15 minutes with almost a tablespoonful of castor oil.

Wart Eradicators.

Pharmacists are frequently called upon to recommend or offer some remedy for the eradication of the peculiar excrescences known as warts. These are peculiar in that sometimes a very simple remedy applied but once or twice will cause them to disappear and at other times they persist indefinitely in spite of all treatment.

Every one is familiar, of course, with the application of silver nitrate in sticks, concentrated nitric acid, creosote, carbolic acid, or salicylic acid in any of the forms of corn cures. Glacial, acetic and dichloroacetic acid are frequently employed, while some add salicylic acid in the proportion of 1 in 16 to concentrated acetic acid. Another escharotic solution consists of chromic acid 1 part, water

5 parts. Unna recommends mercurial plaster containing 5 per cent of arsenic. It is also recommended to shave off the wart to the quick and then to apply a compress wet with a saturated solution of ammonium chloride. A corrosive collodion for warts consists of 1 part of mercuric chloride dissolved in 20 parts of collodion. Other applications are: Concentrated hydrochloric acid, solution of antimony chloride, solution of mercuric nitrate, potassium bichromate, arsenic oleate and copper oleate. Castor oil and oil of cinnamon are also useful. All of these remedies must be applied once or twice daily until the wart disappears. The outer hard, thick layer of cuticle should always be removed before applying anything whatever.

An ointment sometimes recommended is the following:

Verdigris.....	gr. 50
Savin, powder	gr. 50
Soap cerate	av.oz. 1

The following powder is said to be very effective:

Calomel.....	gr. 30
Boric acid.....	gr. 15
Salicylic acid.....	gr. 5
Cinnabar	gr. 8

Rub into the wart 2 or 8 times a day.

In the case of multiple warts, where a large number appear within a short time, there is some constitutional derangement, and the patients are usually advised to take Fowler's solution in very small doses, or magnesium sulphate in 5 gr. doses 8 times daily. The following application has been recommended:

Sublimed sulphur	gr. 120
Glycerin	fl.dr. 5
Acetic acid	fl.dr. 1

Apply repeatedly to each wart, continuing the treatment for several days. The warts dry up and then drop off.

Children's warts, appearing principally on the hands, may be removed by applying during several days solution of soda or potassa, and then covering them with collodion containing tannin. The same treatment applies for common warts.

Erasmus Wilson considers the application of caustic potassa in stick form to be the

quickest and most reliable eradicator, one treatment being all that is usually required.

Warts appearing on the skin of elderly persons must be looked upon as suspicious (cancer) and should be shown to a reliable surgeon.

Worm Medicines.

See Vermifuges.

Miscellaneous Remedies.

Under this heading are grouped remedies for such diseases as did not naturally fall into any special chapter:

Pain Dispeller:

Aromatic spirit of ammonia.....	fl.oz. 1
Compound spirit of ether.....	fl.oz. 1
Spirit of peppermint.....	fl.oz. 1
Compound tincture of lavender.....	fl.oz. 1
Spirit of camphor.....	fl.oz. 1
Tincture of capsicum.....	fl.oz. 1
Tincture of opium.....	fl.oz. 1
Tincture of rhubarb.....	fl.oz. 1
Alcohol.....	fl.oz. 8
Water, enough to make.....	fl.oz. 16

This is useful in diarrhœa, dysentery, cramps, etc., and may be known as "Pain Cure," "Pain Dispeller," "Carminative Balsam," "Pain Expeller," etc.

Bibron's Rattlesnake Poison Remedy:

Bromine.....	gr. 100
Diluted alcohol.....	fl.oz. 8
Potassium iodide.....	gr. 4
Corrosive sublimate.....	gr. 2

Mix the bromine and alcohol, place the other ingredients in a mortar and add sufficient of the bromine-alcohol solution to dissolve them.

This has been recommended as an antidote to rattlesnake poisoning and is known as Bibron's antidote.

Poison Ivy:

The following has been recommended for poisoning by poison ivy:

Sodium sulphite.....	gr. 60
Glycerin.....	fl.oz. ½
Camphor water, enough to make.....	fl.oz. 4

Apply several times daily.

Boil Remedy:

The following are recommended for boils or furuncles:

A.

Salicylic acid.....	gr. 120
Soap plaster.....	av.oz. 2
Lead plaster.....	av.oz. 1

B.

Ichthyol.....	gr. 60
Resin plaster.....	gr. 60
Lead plaster.....	gr. 120

These are to be applied daily on a cloth.

C. Furuncle Remedy:

Tincture of chloride of iron.....	fl.oz. 1
Liquor potassii arsenitis.....	fl.dr. 1½
Aqua.....	fl.oz. 8

Take a fluidram after each meal.

Use, locally, camphorated carbolic acid and a poultice of linseed meal, when there is much inflammation. Also advise small doses of epsom salts to prevent constipation.

Remedy for Bruises:

Ammonium chloride.....	av.oz. ½
Alcohol.....	fl.oz. ½
Water.....	fl.oz. 5

Dilute acetic acid may be substituted for one-half the water and the alcohol may be replaced by 1 fluidounce of tincture of arnica.

This preparation is a valuable application for bruises or contusions; it is therefore of value in the treatment of ecchymotic conditions, such as "black eye." If applied at once and continuously for a time after the blow has been received, no discoloration will appear.

The following is also useful for bruises and "black eyes:"

Potassium nitrate.....	gr. 15
Ammonium chloride.....	gr. 80
Aromatic vinegar.....	fl.dr. 4
Water, enough to make.....	fl.oz. 8

Insect Bite Remedy:

Olive oil.....	fl.oz. 1
Water of ammonia.....	fl.oz. 1
Oil of turpentine.....	fl.dr. ½
Tincture of opium.....	fl.dr. ½

The above is recommended as an application to insect bites or stings.—H.

See also Liniments and Ointments in Part II.

Delirium Tremens:

Chloral hydrate.....	gr. 90
Potassium bromide.....	gr. 120
Hoffmann's drops.....	fl.dr. 2
Tincture of valerian.....	fl.dr. 8
Water, enough to make.....	fl.oz. 6

Mix, dissolve and filter if necessary. This mixture is advised against delirium tremens or "jim jams" or the nervous condition bordering upon it.

Croup Remedy:

Fluid extract of senega.....	fl.dr. 2
Fluid extract of ipecac.....	fl.dr. ½
Oxymel of squill.....	fl.dr. 6
Tartar emetic.....	gr. 1½
Simple syrup.....	fl.oz. 4

Teaspoonful doses of this are recommended for croup.

Anaphrodisiac Pills:

The following pills are used as anaphrodisiacs or to repress sexual excitement. Each pill should contain:

Camphor.....	gr. 8
Lactucarium.....	gr. ¼
Guarana.....	gr. ½
Extract of belladonna.....	gr. ¼
Denarcotized opium.....	gr. ¼

Brown-Sequard's Anti-Epileptic Mixture:

This mixture is in rather extended use, but various formulas for it have appeared. The following may be employed:

Sodium bromide.....	gr. 180
Potassium bromide.....	gr. 180
Ammonium bromide.....	gr. 180
Potassium iodide.....	gr. 90
Ammonium iodide.....	gr. 90
Ammonium carbonate.....	gr. 60
Tincture of columbo.....	fl.oz. 1½
Water, enough to make.....	fl.oz. 8

Mix, dissolve and filter.

II.

Potassium bromide.....	gr. 30
Potassium iodide.....	gr. 30
Ammonium bromide.....	gr. 30
Potassium bicarbonate.....	gr. 4
Infusion of columbo.....	fl.oz. 6

Prepare like the preceding.

Brown-Sequard's Neuralgic Pills.

Each pill contains:

Extract of hyoscyamus.....	gr. ½
Extract of conium.....	gr. ½
Extract of Ignatia bean.....	gr. ½
Extract of opium.....	gr. ½
Extract of aconite.....	gr. ½
Extract of cannabis ind.....	gr. ½
Extract of stramonium.....	gr. ½
Extract of belladonna.....	gr. ½

Erysipelas:

The following are employed for erysipelas:

I.

Tannic acid.....	gr. 100
Camphor.....	gr. 100
Ether.....	fl.dr. 14

Mix and dissolve. Apply once or twice daily.

II.

Sodium salicylate.....	gr. 160
Sodium bicarbonate.....	gr. 80
Water, boiling.....	fl.oz. 16

Apply upon compresses.

Castor Oil Substitute:

The following preparation has considerable sale under such names as "Castor Oil Substitute," "Castroilina," "Castorol," "Castorbena," etc:

Senna.....	av.oz. 8
Pumpkin seed.....	av.oz. 8
Anise.....	av.oz. ½
Wormseed, German.....	av.oz. 1½
Rochelle salt.....	av.oz. 2
Sodium bicarbonate.....	av.oz. 1
Sugar.....	av.oz. 56
Oil of wintergreen.....	fl.dr. 2
Oil of peppermint.....	fl.dr. ½
Alcohol.....	fl.oz. 2
Water.....	sufficient

Mix the three seeds, bruise to fine powder, add the senna, pour on 48 fluidounces of hot water, macerate in a warm place for 8 hours, pour off the liquid, upon the dregs pour 16 fluidounces of hot water, macerate for 1 hour, pour off the liquid, express the residue in a cloth, mix the two liquids, evaporate at a gentle heat to 32 fluidounces, add the soda and salts, dissolve by agitation, add the oils previously dissolved in the alcohol, and percolate the whole through the sugar

Gross' Neuralgic Pills.

Each pill contains:

Quinine sulphate.....	gr. 2
Morphine sulphate.....	gr. ½
Strychnine.....	gr. ½
Arsenious acid.....	gr. ½
Extract of aconite leaves.....	gr. ½

"Hot Drops," or "No. 6."

Tincture of capsicum.....	fl.oz. 8
Tincture of myrrh.....	fl.oz. 6

Mix and filter.

PART III.

PROPRIETARY PREPARATIONS.

This department gave rise, in the first edition of the work, to some criticism based upon the argument that, inasmuch as the formulas given in connection with the designated preparations must, by reason of the extreme difficulty, if not the impossibility, of determining exactly the composition of many organic compounds, in numerous instances be more or less conjectural, that therefore all reference to them by their trade titles should be omitted.

This argument wholly mistakes the purpose of this Part and the nature of the formulas given.

The editors hold it to be the paramount duty of every pharmacist to know everything possible concerning the constituents of everything he may be called upon to dispense or sell. In this way only can he discharge his obligations in his professional relations to the physical welfare of his patrons. Secrecy and monopoly have, by the humane command of the professions, no legitimate place in medical science.

The formulas in this department are, therefore, primarily designed not to furnish information for duplicating the various preparations, but to give pharmacists and physicians an approximate idea of their composition and properties. It should be clearly understood that we quote the formulas simply for what they may be worth, considering the credibility of the source and considering also that manufacturers are at liberty to change their formulas at any time.

The reader should bear in mind that the titles of preparations in this department are, in nearly every instance, presumptively the property of their respective manufacturers, and can be legally used (until a court decision may otherwise decree) only to designate the original compounds. Competing preparations made by the retail druggist or others have no right in law or morals to valid trade-marked names; no self-respecting druggist will fraudulently substitute his own products when

another's is clearly indicated by its specific title. It is, however, the right and the duty of every pharmacist to encourage the use of his own products on their own merits, and in accordance with the recognized principles of honest and open competition.

The source of our information is given in most cases and is believed to be reliable, but should any formula, by reason of any incorrect statement or inference, be regarded as unjust to the original preparation or as impairing its reputation, the correction will be cheerfully made on receipt of the requisite information.

REFERENCE ABBREVIATIONS.

A. Dr.	American Druggist
A. J. P.	American Journal of Pharmacy
Apoth. Ztg.	Apotheke Zeitung
B. & C. Dr.	British and Colonial Druggist
Can. Dr.	Canadian Druggist
D. C.	Druggists' Circular
Era Form.	Era Formulary
Fenner's Form.	Fenner's Formulary
Ind. Ph.	Indiana Pharmacist
Kilner's Form.	Kilner's Formulary
Nat. Dr.	National Druggist
N. I.	New Idea
Pharm.	Pharmacist
Ph. Central.	Pharmaceutische Centralblatt
Ph. Era.	Pharmaceutical Era
Ph. Post.	Pharmaceutische Post
Ph. Rec.	Pharmaceutical Record
Ph. Rundsch.	Pharmaceutische Rundschau
Ph. Ztg.	Pharmaceutische Zeitung
Reg. Ph.	Registered Pharmacist
W. D.	Western Druggist

Abernethy's Pills.

Each pill contains:

Socotrine aloes	gr. 2
Extract of henbane	gr. 2
Blue mass	gr. 1
Ipecac	gr. $\frac{1}{4}$

—Fenner's and Beasley's Formularies.

Acetic Cantharidal Vesicant.

Cantharides, freshly powdered	av.oz. 8
Acetic ether	sufficient

Moisten the drug with the liquid, pack firmly in a percolator, add more menstruum,

macerate for a few hours, and then percolate slowly until 16 fluidounces of liquid have been obtained.

Liquor Epispasticus or Blistering Liquid of the British pharmacopeia is one-half the strength of the above.—Pharm.

Actina.

Various formulas have been offered for similar preparations as follows:

I.

Menthol	.....gr.	60
Oil of mustard	.....fl.dr.	2
Alcohol	.....m.	80
Ether	.....fl.dr.	1
Sponge, enough to make	.....oz.	1

—Prof. F. B. Tiffany, K. C.

II.

Menthol	.....gr.	60
Oil of mustard	.....fl.dr.	2
Hydrobromic ether	.....fl.dr.	1
Sponge, enough to make	.....oz.	1

Adhæsol.

Copal	.....parts	70
Benzoin	.....parts	6
Tolu	.....parts	6
Oil of thyme	.....parts	4
Alphanaphthol	.....parts	6
Ether	.....parts	200

—Merck's Bulletin.

Albolene.

According to manufacturers' statements relative to albolene and liquid albolene, these are presumably purified petrolatum and purified liquid petrolatum respectively.

Aletris Cordial.

I.

What purports to be a similar preparation is made as follows:

Stargrass	.....av.oz.	1
Blue cohosh	.....av.oz.	1
Cramp bark	.....av.oz.	1
Helonias or false unicorn	.....av.oz.	1
Simple syrup	.....fl.oz.	2
Alcohol	.....fl.oz.	2
Sherry wine, enough to make	.....fl.oz.	16

Extract the drugs with the 16 fluidounces of wine to which the alcohol has been added, and obtain 14 fluidounces of liquid. Mix this with the syrup and filter if necessary.

II.

The following will make a satisfactory similar preparation (Fenner's Form.):

Unicorn root (aletris)	.....av.oz.	2
Catnip	.....av.oz.	1
Cramp bark	.....av.oz.	1
Mitchella	.....av.oz.	2
Blue cohosh	.....av.oz.	1/2
Cinnamon	.....av.oz.	1/4
Orange peel	.....av.oz.	1/4
Caraway	.....gr.	60
Sugar	.....av.oz.	10
Diluted alcohol	.....fl.oz.	20
Water	.....sufficient	

Mix the drugs, grind to coarse powder, moisten the diluted alcohol, pack in a percolator, pass the remainder of the diluted alcohol through the drug, and then follow with water until 20 fluidounces of percolate are obtained. In this dissolve the sugar and to the solution add enough water to make 82 fluidounces.

Allcock's Porous Plaster.

Hager states it contains India rubber, Burgundy pitch, olibanum, myrrh and a small amount of oil of turpentine.

Allen's Hair Restorer.

Sulphur	.....gr.	160
Lead acetate	.....gr.	280
Glycerin	.....fl.oz.	4
Water (perfumed)	.....fl.oz.	10

—Wittstein.

Ammonamide. (Ammoniated Phenylacetamide.)

Probably similar to Ammonol, which see.

Ammonol (Ammoniated Phenylacetamid).

This is claimed to be a derivative of the amido benzene series— $C_6H_5NH_2$ —containing ammonia in an active form. Dr. Eccles says the following mixture will give like medicinal results:

Acetanilid	.....parts	4
Sodium bicarbonate	.....parts	2
Ammonium carbonate	.....part	1

Amylocarbol.

Carbolic acid	.....parts	9
Green soap	.....parts	150
Amyl alcohol	.....parts	160
Water, enough to make	.....parts	1000

—Coblentz.

Anaspaline.

Petrolatum	.....part	1
Wool fat	.....parts	3

—A. D.

Anæsthetic Obtundent.

A dental anæsthetic containing about 1 part of cocaine hydrochlorate in 30 of mixture, also carbolic acid, camphor, glycerin, oils of cinnamon and citronella, and probably alcohol.—Sadtler.

Analgesin.

This is said to contain ammonium chloride, caffeine, sodium bicarbonate and acetanilid.

It should not be confounded with analgesine, which is the French name for antipyrine.

Anderson's Pills.

I.

Barbadoes aloes with some jalap and oil of anise.

II.

Aloes parts 8
Myrrh. parts 2
Saffron part 1

Mix and make into a mass with water and oil, and divide into 4-grain pills. This is said to be the original formula.

Anesthyl.

Ethyl chloride. parts 5
Methyl chloride..... part 1

Angier's Petroleum Emulsion.

This is advertised to contain in each ounce 88½ per cent of purified petroleum and 12 grains of the salts of lime and soda. The following will yield a preparation with these essential ingredients in like proportions:

Liquid petrolatum.....fl.oz. 16
Acacia, powder.....av.oz. 8
Glycerin.....fl.oz. 4
Calcium hypophosphite.....gr. 288
Sodium hypophosphite.....gr. 288
Water, enough to make.....fl.oz. 48

Add the acacia to the petrolatum and mix thoroughly in a large mortar, then add 16 fluidounces of water (all at once) and rub briskly until the emulsion is formed. Dissolve the hypophosphites in 8 fluidounces of water, to which add the glycerin; then add all to the emulsion and rub well together, adding any water necessary to make up the measure of 8 pints of finished product.

Angostura Bitters.

Angostura bark.....av.oz. 4
Bitter orange peel.....av.oz. 2
Canada snake root.....av.oz. 2
Cinchona.....av.oz. 2
Serpentaria.....av.oz. 2
Gentian.....av.oz. 1
Galangal.....av.oz. 1
Calamus.....av.oz. 1
Cardamom.....av.oz. ½
Cinnamon.....av.oz. ¼
Cloves.....av.oz. ¼
Coriander.....av.oz. ¼
Mace.....av.oz. ¼
Alkanet root.....av.oz. ½
Alcohol.....fl.oz. 24
Water.....fl.oz. 16

Mix the drugs, reduce to fine powder, and extract with a mixture of the alcohol and water.

This makes an extract from which the bitters may be prepared by mixing 1 fluidounce of the extract with 24 fluidounces of alcohol, 40 of water, and 1 fluidounce of glycerin.—Fenner's Formulary.

Antidiabetin.

This is said to be a mixture of saccharin and mannite. It is marketed in three strengths—Nos. 70, 10 and 1—these numbers indicating the ratio in sweetening power to cane sugar.—Ph. Ztg.

Antidiphtherikon.

Oil of birch.....parts 5
Oil of beech.....parts 8
Alcohol.....parts 90
Potassium carbonate.....part 1
Potassium sulphide.....parts 5
—Coblentz.

Antikamnia.

This is claimed to be a "combination of coal-tar derivatives of the series $C_N H_{2N-6}$." One chemist has reported the following composition arrived at by analysis:

Acetanilid.....parts 47
Sodium bicarbonate.....parts 50
Tartaric acid.....parts 8
—A. J. P.

Another chemist, Goldman, however, gives the following as the composition:

Acetanilid.....parts 7
Sodium bicarbonate.....parts 2
Caffeine.....part 1

Antikol (Anti calor).

The manufacturers state that it contains acetanilid, caffeine citrate, quinine bisulphate, and sodium bicarbonate, each 10 grains, containing 1 grain of caffeine citrate and 1-10 grain quinine bisulphate.

A writer in the *Pharmaceutische Rundschau* gives the following as the result of an analysis:

Acetanilid.....	parts 30
Sodium bicarbonate.....	parts 7
Tartaric acid.....	parts 3

Antikrinin.

See Perl's Antikrinin.

Arophene.

This contains about 1½ per cent of cocaine hydrochlorate, also carbolic acid, chloral, glycerin, oil of rose and probably alcohol. It is used as a dental anæsthetic.—Sadler.

Arsenauro. (Solution of Bromide of Gold and Arsenic: Barclay.)

This, the manufacturers claim, contains, in every 10 drops, 1-32 grain of gold bromide and 1-32 grain of arsenic bromide.

Aubergier's Syrup of Lactucarium.

According to Procter, the following yields similar results:

Lactucarium, German.....	gr. 60
Sugar.....	gr. 120
Citric acid, powder.....	gr. 15
Orange flower water.....	fl.oz. 1
Simple syrup.....	fl.oz. 18
Diluted alcohol,	
Water.....	of each, sufficient

Triturate the lactucarium with the sugar until reduced to powder. Put the mixture in a small funnel, and pour on diluted alcohol until the drug is exhausted or until 2½ fluidounces of percolate are obtained. Evaporate this to one-half fluidounce and add it to the syrup previously heated to boiling. Continue the ebullition slowly until the liquid measures 17½ fluidounces, add the citric acid, dissolve, strain, allow to cool, and add the orange flower water.

Ayer's (J. C.) Cathartic Pills.

Each pill is said to weigh nearly 4 gr. and consists of aloes, compound extract of colocynth, gamboge, capsicum and oil of peppermint.—Hager.

Ayer's (J. C.) Cherry Pectoral.

Syrup of wild cherry.....	fl.dr. 6
Syrup of squill.....	fl.dr. 3
Tincture of bloodroot.....	fl.dr. 2
Sweet spirit of nitre.....	fl.dr. 2
Wine of antimony.....	fl.dr. 3
Wine of ipecac.....	fl.dr. 3
Simple syrup.....	fl.oz. 1½
Morphine acetate.....	gr. 2
Spirit of bitter almond.....	fl.dr. 1

—N. I.

Ayer's (J. C.) Hair Vigor.

Lead acetate.....	parts 3
Sulphur.....	parts 2
Glycerin.....	parts 14
Water.....	parts 80

—Popular Hygienic Journal.

Ayer's (J. C.) Sarsaparilla.

Fluid extract of sarsaparilla.....	fl.oz. 3
Fluid extract of stillingia.....	fl.dr. 2½
Fluid extract yellow dock.....	fl.oz. 3
Fluid extract podophyllum.....	fl.dr. 2½
Sugar.....	av.oz. 1
Potassium iodide.....	gr. 90
Iron iodide.....	gr. 10

—Pharm.

Ayer's Recamier Cream.

According to N. I., its formula is similar to this:

Zinc oxide.....	av.oz. 2
Glycerin.....	fl.dr. 6½
Water.....	fl.dr. 2½
Spirit of rose (4 fl.dr. to 16 fl.oz.).....	fl.dr. 1

Triturate together until a perfectly smooth homogeneous mixture results.

In addition to the above, it is said to contain a small amount of corrosive sublimate.

Ayer's Recamier Moth and Freckle Lotion.

This is said to contain corrosive sublimate dissolved in almond emulsion.—N. I.

Ayer's Recamier Powder.

Contains arrow root and zinc oxide.—N. I.

Ayer's Recamier Soap.

This is similar to ordinary toilet soap.—N. I.

Ayer's Vita Nuova.

Said to be port wine containing a small amount of cocaine.—N. I.

Barr's Dental Anæsthetic.

This is an alcoholic solution of oils of clove and peppermint.—Sadler.

Barry's Tricopherous.

According to N. I., a substantially similar preparation is made as follows:

Castor oil.....	fl.oz. 1
Alcohol.....	fl.oz. 4 1/2
Oil of lavender.....	drops 5
Oil of bergamot.....	drops 2
Color pink with alkanet root.	

Beckwith's Hog Cholera Remedy.

This, according to a patent specification, consists of equal parts of mandrake, sulphur, sodium bicarbonate, charred coffee and potassium chlorate.

Beecham's Pills.

Aloes.....	gr. 480
Rhubarb.....	gr. 90
Sodium sulphate.....	gr. 24
Saffron, true.....	gr. 24
—Ind. Ph.	

Make into 3 gr. pills.

Begg's Ague Pills.

Each pill contains

Quinine sulphate.....	gr. 3/8
Cinchonine sulphate.....	gr. 1/4
Rhubarb.....	gr. 3/8

With a little flavoring.—N. I.

Bejean's Gout Cure.

The formula is said to be as follows:

Sodium salicylate.....	gr. 60
Potassium iodide.....	gr. 60
Extract of gentian.....	gr. 75
Alcohol.....	fl.oz. 2
Oil of wintergreen.....	fl.dr. 1 1/2
Water.....	fl.oz. 8

Benzothymol.

According to the statement of composition by the manufacturers, this contains about the same essential ingredients as Lister's Antiseptic Solution, Part I.

Big G.

The following was contributed to the D. C. as making a preparation similar in appearance and effect:

Berberine hydrochlorate.....	gr. 15
Zinc acetate.....	gr. 15
Glycerin.....	fl.dr. 4
Water.....	fl.oz. 7 1/2

Birney's Catarrh Powder.

Cocaine hydrochlorate.....	gr. 19
Magnesium carbonate.....	gr. 18
Powdered peppermint leaves.....	gr. 5
Sugar of milk, enough to make.....	oz. 1

Divide into 4 equal parts and put into 2-dr. vials.—Dr. Eccles.

Bishop's Granular Effervescent Citrate of Magnesia.

This contains a mixture of sodium bicarbonate and tartaric acid.—Wittstein.

Blancard's Pills.

These are pills of iodide of iron.—Landerer.

Blatta Insect Powder.

I.	Persian insect powder.....	av.oz. 8
	Borax.....	av.oz. 8
	Sulphur.....	av.oz. 4
	Oil of eucalyptus.....	fl.dr. 2

II.	Persian insect flowers.....	av.oz. 8
	Borax.....	av.oz. 8
	Sulphur.....	av.oz. 4
	Eucalyptus leaves.....	av.oz. 4
Mix and reduce to fine powder.		

Boerhave's Bitters.

Aloes.....	gr. 180
Cinnamon.....	av.oz. 1
Galangal.....	av.oz. 1
Zedoary.....	av.oz. 1
Angelica.....	av.oz. 1
Cloves.....	av.oz. 1
Gentian.....	av.oz. 1
Quassia, cut.....	av.oz. 1
Water.....	fl.oz. 9
Alcohol.....	fl.oz. 6
Sugar.....	av.oz. 8
—Hager.	

Boonekamp Bitters.

Socotrine aloes.....	av.oz. 8
Myrrh.....	av.oz. 4
Galangal.....	av.oz. 4
Saffron.....	av.oz. 4
Cloves.....	av.oz. 1
Wormwood.....	av.oz. 1
Gentian.....	av.oz. 4
Rhubarb.....	av.oz. 4
Turmeric.....	av.oz. 4
Agaric.....	av.oz. 8
Cinnamon.....	av.oz. 1/2
Fennel.....	av.oz. 16
Alcohol.....	pints 12
Water.....	pints 6

In the alcohol, before it is mixed with the water, dissolve:

Oil of wormwood.....	m. 90
Oil of fennel.....	m. 90
Oil of curled mint.....	m. 50

—A. D.

Borol.

This is a fused mixture of boric acid and sodium bisulphate.—Ph. Central.

Borolyptol.

Said to be a combination of 5 per cent of aceto-boro-glyceride, 0.1 per cent of formaldehyde, and pinus pumilio, eucalyptus, myrrh, storax, benzoin. The following may yield a preparation of similar composition:

Glyceride of boroglycerin, U.S.P..	dr. 10
Benzoic acid.....	80
Oil of eucalyptus.....	m. 15
Oil of pinus pumilio.....	m. 15
Formaldehyde solution.....	fl.dr. 2
Water, distilled.....	fl.oz. 16

Borosol.

This is a colorless liquid containing, according to various analyses, aluminium tartrate, boric acid, salicylic acid, and free tartaric acid in aqueous solution.—Coblentz.

Borosalyl.

This is said to be similar:

Boric acid.....	parts 25
Salicylic acid.....	parts 82
Water.....	sufficient

Triturate the acids with a small quantity of water to a smooth paste, dry and reduce to powder.

Bor-Salicylate.

Appears to be made by triturating together 5 parts of sodium salicylate with 4 of boric acid and a small amount of water, drying and powdering.—Coblentz.

Boschee's German Syrup.

According to N. I., the following is similar:

Oil of tar.....	fl.dr. 1
Fluid extract of wild cherry....	fl.dr. 6
Fluid extract of ipecac.....	fl.dr. 4
Tincture of opium.....	fl.dr. 4
Water.....	fl.oz. 8
Sugar.....	av.oz. 14
Magnesium carbonate.....	gr. 180

Rub the oil thoroughly with the magnesia in a mortar; mix the fluid extracts with the water, and triturate with the mixture in the mortar; filter and dissolve in the liquid the sugar without heat, and add the tincture.

Bradycrotine.

According to N. I., the following furnishes a preparation approximating the original:

Caffeine, alkaloid.....	gr. 6
Potassium bromide.....	gr. 20
Sodium bromide.....	gr. 20
Simple syrup.....	fl.dr. 3
Alcohol.....	fl.dr. 2
Port wine, enough to make....	fl.dr. 18
Caramel.....	enough to color

Brandreth's Pills.

Compound extract of colocynth..	gr. 30
Aloes.....	gr. 135
Gamboge.....	gr. 45
Castile soap.....	gr. 30
Oil of peppermint.....	drops 2
Oil of cinnamon.....	drop 1

Glycerin and alcohol to make 100 pills.—

Ph. Rundsch.

Brassicon.

Oil of peppermint.....	fl.dr. 1
Camphor.....	gr. 180
Ether.....	fl.dr. 2½
Alcohol.....	fl.dr. 7
Essential oil of mustard.....	drops 12

—Suddeutsche Apoth. Ztg.

Bromidia.

According to the manufacturers, each fluidram contains 15 grains each of pure chloral hydrate and purified potassium bromide, and ⅙ grain each of genuine imported extract of cannabis indica and hyoscyamus. The formula below furnishes a preparation containing essentially the same ingredients in about the same proportions:

Extract of cannabis indica.....	gr. 16
Extract of henbane.....	gr. 16
Chloral hydrate.....	av.oz. 4½
Potassium bromide.....	av.oz. 4½
Saccharin.....	gr. 2
Water, enough to make.....	fl.oz. 16
Caramel,	
Pumice, powder.....	of each, sufficient

Triturate the extracts with the pumice to powder, dissolve the chloral, saccharin and potassium bromide in a portion of the water, filter this solution through a filter containing the powder, pass the remainder of the water through the filter and color the liquid with caramel.

Bromophtharin.

Said to be a mixture of zinc oxide, calcium oxide, carbonate calcium, sodium sulphate, and sand.—Rundsch.

Bromo-Seltzer.

The following may yield a similar preparation:

Acetanilid.....	av.oz. ½
Tartaric acid.....	av.oz. 2¼
Sodium bicarbonate.....	av.oz. 2¼
Potassium bromide.....	av.oz. 1
Sugar.....	av.oz. 2

Bronchiline.

The following has like ingredients in practically the same proportions as are claimed by the manufacturers for the original (N. I.):

Mullein.....	gr. 64
Hoarhound.....	gr. 64
Senega.....	gr. 64
Ipecac.....	gr. 64
Sanguinaria.....	gr. 64
White pine.....	gr. 64
Wild cherry.....	gr. 256
Chloroform.....	fl.dr. 1
Sugar.....	av.oz. 14
Tar water,	
Alcohol,	of each, sufficient

Mix the drugs, grind to coarse powder, and percolate with a mixture of 3 volumes of alcohol and 8 of tar water, until 8 fluid-ounces of liquid are obtained. Percolate this through the sugar, adding enough tar water through the percolator to make the percolate measure 16 fluidounces, and to the latter add the chloroform.

Brown's Male Fern Vermifuge.

The following makes a very similar preparation (N. I.):

Fluid extract of male fern.....	fl.oz. 3
Simple syrup.....	fl.oz. 5
Oil of wintergreen.....	drop 1

Brown's Bronchial Troches.

This makes a good preparation of the kind:

Extract of conium.....	av.oz. $\frac{1}{2}$
Acacia, powder.....	av.oz. 2
Cubeb, powder.....	av.oz. 2
Extract of licorice, powder.....	av.oz. 8
Sugar, powder.....	av.oz. 12
Oil of peppermint.....	m. 3

Make into a mass with water. Mix thoroughly and divide into lozenges of about 80 grains each.

Some formulas do not mention the oil of peppermint.—W. D.

Bucklen's Arnica Salve.

Extract of arnica.....	av.oz. 2
Resin cerate.....	av.oz. 16
Petrolatum.....	av.oz. 4
Raisins, seedless.....	av.oz. 16
Fine-cut tobacco.....	av.oz. 1
Water.....	sufficient

Boil the raisins and tobacco in 32 fluid-ounces of water until they are exhausted; express the liquid and evaporate down to 8 av.ounces. Soften extract of arnica with some hot water, mix the preceding liquid

with it, add this to the resin cerate, and petrolatum previously melted together.—Nat. Dr.

Bumsted's Gleet Cure.

The following is a favorite prescription:

Zinc sulphate.....	gr. 10
Extract of opium, aqueous.....	gr. 60
Glycerite of hydrastis.....	fl.dr. 1
Glycerin.....	fl.dr. 4
Water.....	fl.oz. 4

—W. D.

Burnett's Cocaine.

A similar preparation is as follows:

Cocoonut oil.....	av.oz. 4
Cologne water.....	fl.oz. 4

—W. D.

Cactus or Cactine Pills.

An extolled proprietary preparation is claimed to represent in each pill the "active proximate principle of the cactus grandiflora." As neither a process for its isolation or preparation nor a test for identity appears in any standard work, the existence of this active principle in an isolated state has been questioned. Cactus or Cactine Pills may be prepared by saturating homœopathic sugar globules with the concentrated tincture of cactus grandiflora (the so called green drug fluid extract) and the alcohol removed by drying in the air.

Calisaya La Rilla.

The following is said (A. D.) to afford a satisfactory compound of similar composition:

Calisaya, powder.....	gr. 640
Lime, calcined, powder.....	gr. 480
Glycerin.....	fl.dr. 4
Hydrochloric acid.....	drops 10
Simple syrup.....	fl.oz. 7
Oil of orange.....	fl.dr. $\frac{3}{4}$
Oil of lemon.....	drops 10
Oil of coriander.....	drops 5
Water,	
Alcohol.....	of each, sufficient
Fuller's earth.....	gr. 240

Mix the calisaya and lime intimately, add $3\frac{1}{2}$ fluidounces of water, stir well and let dry slowly. Percolate with a mixture of the acid and alcohol, adding sufficient alcohol to bring the bulk up to 4 fluidounces. To this add the oils, and, after shaking thoroughly, the glycerin syrup and sufficient water to make 16 fluidounces; finally add the fuller's earth, shake well and filter.

Calolactose.

The following is the composition according to the manufacturers:

Calomel.....	part 1
Bismuth subnitrate.....	part 1
Milk sugar.....	parts 8

It is important that the ingredients be subjected to prolonged trituration.

Camphoid.

Collodion.....	part 1
Camphor.....	part 1
Absolute alcohol.....	part 1

Campho-Phenique.

Claimed to be a chemical combination of phenol and camphor.

Carbolic Smoke Ball.

This is composed of licorice root, flour, white hellebore and some tarry body having the odor of carbolic acid.—N. I.

Carter's Little Liver Pills.

The following is said by the N. I. to make a similar preparation:

Podophyllin.....	gr. 1½
Aloes, socotrine.....	gr. 3½
Mucilage of acaçia.....	sufficient

Mix, divide into 12 pills and coat with sugar.

The entire 12 pills weigh about 7½ gr.

Cascara Cordial.

Cascara sagrada.....	av.oz. 3
Berberis aquifolium.....	gr. 525
Diluted alcohol.....	av.oz. 7
Coriander.....	av.oz. ½
Angelica.....	gr. 25
Oil of anise.....	drops 2
Oil of orange.....	drops 2
Granulated sugar.....	av.oz. 8¾
Fluid extract of licorice.....	gr. 180
Tincture of cudbear.....	sufficient
Water, sufficient to make.....	fl.oz. 32

Mix a decoction of the cascara and water at 212 deg. F. and filter, then dissolve the sugar in resulting liquid. Pack the coriander, angelica and berberis (in coarse powder) in a percolator, and displace with the alcohol, in which the oils have previously been dissolved. Lastly mix the cascara solution, the aromatic tincture and the tincture of cudbear together, and add the fluid extract of licorice.

Castoria.

According to the statements of composition made by the manufacturers, the following contains like essential ingredients:

Fluid extract of wormseed.....	fl.oz. 1½
Fluid extract of pumpkin seed, fl.oz.	1
Fluid extract of senna.....	fl.oz. 1
Fluid extract of rhubarb.....	fl.dr. 3
Potassium carbonate.....	gr. 60
Rochelle salt.....	gr. 720
Oil of peppermint.....	drop 1
Oil of anise.....	drops 2
Oil of wintergreen.....	drops 5
Alcohol.....	fl.oz. 1
Sugar.....	av.oz. 11
Water, enough to make.....	fl.oz. 16

Mix the fluid extracts of wormseed and pumpkin seed with 4½ fluidounces of water, clarify by filtering through purified talcum, and add enough water through the filter to make filtrate measure 7 fluidounces. To this add the sugar, Rochelle salt and potassium carbonate, dissolve by the aid of gentle heat, add the fluid extracts of senna and rhubarb, and the oils dissolved in the alcohol, and finally enough water, if necessary, to make 16 fluidounces.

Celerina.

See Compound Elixir of Celery, Part I, which contains like essential ingredients as are claimed for the original, which are 5 grains each of celery, coca, kola, viburnum in each teaspoonful, together with aromatics.

Centaur Liniment.

The following is said (N. I.) to make a similar preparation:

I. For man:

Oil of pennyroyal.....	fl.dr. 4
Oil of thyme (white).....	fl.dr. 2
Oil of turpentine.....	fl.dr. 2
Soap.....	gr. 180
Caustic soda.....	gr. 10
Water, enough to make.....	fl.oz. 16

II. For beast:

Oil of spearmint.....	fl.dr. 1
Oil of mustard.....	m. 15
Oil of turpentine.....	fl.dr. 2
Oil of amber, crude.....	fl.dr. 4
Black oil.....	fl.dr. 4
Soap.....	gr. 180
Caustic soda.....	gr. 10
Water, enough to make.....	fl.oz. 16

Chamberlain's Relief.

Tincture of capsicum.....	fl.oz. 1
Spirit of camphor.....	fl.dr. 6
Tincture of guaiac.....	fl.dr. 2
Coloring.....	sufficient

—J. J. Pierson.

Chapman's Alkaline Powder.

Sodium bicarbonate.....av.oz. 16
Sodium phosphate, dried.....av.oz. 8

Chapman's Internal Disinfectant.

This appears to contain sugar.—Eccles.

Chevalier's Life for the Hair.

Lead sulphide.....gr. 10
Iron sulphide.....gr. 1
Lac sulphur.....gr. 19
Glycerin.....fl.oz. 2
Water.....fl.oz. 5

Flavor with rosemary and rose geranium.—Piper.

Chlor-Lactated Elixir of Pepsin

According to the statements of the manufacturers regarding its composition, this is similar to Compound Elixir of Pepsin, Part I.

Chlor-Lactated Pepsin Powder.

According to the statements of the manufacturers regarding composition, this is similar to Compound Powder of Pepsin, Part I.

Chlorobrom.

A mixture of equal parts of chloralamid and potassium bromide in solution.

Chlorol.

This is said (Arch. Med. Belge) to have the following composition:

Mercuric chloride.....part 1
Sodium chloride.....part 1
Hydrochloric acid.....part 1
Copper sulphate.....parts 8
Water.....parts 1000

The sodium chloride is added to render the solution more stable; the hydrochloric acid to prevent the decomposition of the corrosive sublimate in the presence of albuminoid matter; and the copper sulphate for its vomitive effects—in case the chlorol should be taken internally by mistake.

Chlorolin.

A solution consisting chiefly of mono and tri-chlorphenols.

Chloryl.

See Anesthyl.

Churchill's Syrup.

Compound syrup of hypophosphites.

Christadoro's Hair Dye.

No. 1 contains 60 gr. of pyrogallic acid dissolved in 1 fluidram of alcohol and 4 fluid-ounces of distilled water.

No. 2 consists of 1 av.oz. of silver nitrate dissolved in 1 fluidounce of distilled water and 1 fluidounce of concentrated ammonia to which is added $\frac{1}{2}$ av.oz. of gum arabic dissolved in 3 fluidounces of distilled water.—Era Form.

Clark's Blood Mixture.

Potassium iodide.....gr. 128
Spirit of chloroform.....fl.oz. 1
Solution of potassa.....fl.dr. 1
Water.....fl.oz. 15
Caramel.....sufficient to color
—D. C.

Coaline Headache Powders.

Similar powders are made as follows:

Antipyrine.....gr. 60
Sodium bromide.....gr. 120
Sugar.....gr. 600

Mix and divide into 12 powders.

Cobb's Pills.

Extract of henbane.....gr. 30
Extract of conium.....gr. 30
Extract of colocynth.....gr. 40
Extract of nux vomica.....gr. 4

Mix, make a mass and divide into thirty pills.—Contributed to D. C.

Coddington's Asthma Powder.

A similar preparation may be made as follows (N. I.)

Potassium nitrate.....av.oz. 1
Anise.....av.oz. 1
Stramonium.....av.oz. 1
Lobelia.....av.oz. 1

Coe's Dyspepsia Cure.

Rhubarb, powder.....gr. 120
Fluid extract of gentian.....fl.dr. 3
Peppermint water.....fl.dr. 8
Sodium bicarbonate.....gr. 360

Collins' Disinfecting Powder.

Chlorinated lime, dry.....parts 2
Burnt alum.....part 1
—N. I.

Condy's Fluid.

Potassium permanganate.....gr. 75
Distilled water.....fl.oz. 16
—N. I.

Compound Lithia Tablets.

Calculating from the statement of composition furnished by the manufacturers, the following mixture may furnish a similar result:

Citric acid.....	gr. 1,885
Lithium carbonate.....	gr. 320
Sodium bicarbonate.....	gr. 315
Potassium carbonate.....	gr. 550
Talcum, purified.....	gr. 00

Make into 100 tablets.

Conklin's Salve.

Resin.....	av.oz. 12
Yellow wax.....	av.oz. 1
Mutton suet.....	av.oz. 1

Corassa Compound.—Kilner's Form.

Sugar, powder.....	gr. 185
Gentian, powder.....	gr. 55
Licorice, powder.....	gr. 55
Sodium bicarbonate.....	gr. 64
Cochineal, powder.....	gr. 9

—A. B. Lyons

Coudray's Eau de Quinine.

Tincture of cinchona.....	fl.oz.
Tincture of cantharides.....	fl.dr. 4
Spirit of soap.....	fl.oz. 2
Cologne water.....	fl.oz. 5
Alcohol.....	fl.oz. 5
Peru balsam.....	gr. 192
Oil of bergamot.....	fl.dr. 1½
Oil of sweet orange.....	fl.dr. 1½
Oil of rose geranium.....	drops 80
Brandy, enough to make.....	fl.oz. 40
Cochineal.....	enough to color

Mix and filter.—Ph. Ztg.

Gram's Fluid Lightning.

Contributed by I. L. Fulton to W. D.:	
Oil of mustard, volatile.....	fl.dr. 1
Oil of cajeput.....	fl.dr. 1
Oil of clove.....	fl.dr. 1
Oil of sassafras.....	fl.dr. 1
Ether.....	fl.dr. 4
Tincture of opium.....	fl.dr. 6
Alcohol.....	fl.oz. 10

Creme Simon.

This is stated (A. D.) to be composed of zinc white and powdered talc suspended in a mixture of glycerin and water and perfumed with oil of patchouly.

Cuticura Ointment.

Petrolatum containing boric and carbolic acids, about 2 per cent of the latter, perfumed with oil of bergamot and colored green either with chlorophyll or green aniline.—N. I

Cuticura Resolvent.

Aloes, socotrine.....	gr. 60
Rhubarb, powder.....	gr. 60
Potassium iodide.....	gr. 36
Whiskey.....	fl.oz. 10

Macerate over night and filter.—Kilner.

Cuticura Soap.

This is toilet soap containing boric and carbolic acids.—N. I.

Darby's Prophylactic Fluid.

Potassium permanganate.....	gr. 5
Potassium sulphate.....	gr. 150
Potassium carbonate.....	av.oz. 1¾
Potassium chloride.....	av.oz. ¼
Water, enough to make.....	fl.oz. 16

Darwin's Liniment.

Oil of wormwood.....	fl.oz. 1
Oil of thyme (red).....	fl.oz. 1
Stronger water of ammonia.....	fl.oz. 1
Wood alcohol.....	fl.oz. 13

Davis' (Perry) Pain-Killer.

The following is said to be similar (W. D.):

Tincture of myrrh.....	fl.oz. ½
Tincture of guaiac.....	fl.oz. 1½
Tincture of capsicum.....	fl.oz. 1
Spirit of camphor.....	fl.oz. 2
Alcohol.....	fl.oz. 2
Alkanet.....	sufficient to color

Macerate for a day, then filter.

Davy's Urinal Cakes. (Disinfecting Solid.)

A mixture of resin with sulphates of copper, iron, zinc and sodium and some alum. These salts are probably powdered and mixed with the resin by fusion.—O. J. Bierbach.

Dean's King Cactus Oil.

The following is suggested as yielding similar results:

Petroleum (neutral) oil.....	fl.oz. 16
Kerosene.....	fl.oz. 4
Oil of mirbane.....	enough to perfume
Alkanet.....	to color

Filter the kerosene through alkanet root until it is sufficiently colored, add the petroleum oil, and perfume with oil of mirbane.

Declat's Syrup of Phenic Acid.

The following makes a syrup of phenic acid:

Carbolic acid, pure.....	gr. 67
Glycerin.....	fl.oz. 2
Simple syrup.....	fl.oz. 14
Essence of cognac.....	fl.dr. 1

Dental Anæsthetics.

For the composition of various proprietary dental anæsthetics, see the following in their alphabetical place:

Anæsthesia Obtundent, Arophen, Barr's Dental Anæsthetic, Dental Surprise, Dickson's Improved Anæsthetic, Dorsenia, Eureka Dental Anæsthetic, Jessop's Dental Anæsthetic, Odontodol, Odontunder, and Weinman's Dental Anæsthetic.

Dental Surprise.

This contains about one and one-half per cent of cocaine hydrochlorate and some carbolic acid.—Sadler.

Deshler's Salve.

According to N. I., this is similar to Compound Resin Cerate, U. S. P., 1870, which is prepared as follows:

Resin	av.oz. 4
Suet	av.oz. 4
Yellow wax	av.oz. 4
Gum turpentine	av.oz. 2
Linseed oil	fl.oz. 2½

Melt the wax, suet and resin, add the turpentine and then the oil, strain, and stir until cool.

Dextro-Quinine.

This is said to consist of quinine with other alkaloids left after the extraction of quinine from red cinchona.—Fenner's Form.

Dextro-Saccharin.

Saccharin	part 1
Glucose, crystal	parts 1,000 to 2,000

—B. Fischer.

Dickson's Improved Anæsthetic.

This contains 4 per cent of cocaine hydrochlorate with some carbolic acid and chloral hydrate.—Sadler.

Dioviurnia.

According to the manufacturers' statement as to composition, the following may yield a similar preparation:

Fluid extract of blackhaw	fl.oz. 3
Fluid extract of cramp bark	fl.oz. 3
Fluid extract of wild yam	fl.oz. 8
Fluid extract of star grass	fl.oz. 8
Fluid extract of helonias	fl.oz. 8
Fluid extract of mitchella	fl.oz. 8
Fluid extract of blue cohosh	fl.oz. 3
Fluid extract of scullcap	fl.oz. 8
Simple elixir	fl.oz. 8

Dorsenia.

This is a dental anæsthetic containing one-fifth per cent of cocaine hydrochlorate with some carbolic acid, camphor, and probably alcohol.—Sadler.

Dusart's Syrup.

A French proprietary preparation consisting essentially of syrup of lactophosphate of lime flavored with orange flower water.

Dyche's Compound Capsules of Guaiacol No. 1.

Each capsule contains 5 minims of guaiacol, 10 minims of cod liver oil, and ¼ gr. of codeine.

Dyche's Compound Capsules of Guaiacol No. 2.

Each capsule contains 5 minims of guaiacol, 10 minims of cod liver oil, and ½ gr. of iodine.

Dyche's Compound Pills of Potassium Iodide.

Each pill contains 5 grains of potassium iodide and one-twentieth grain of red iodide of mercury.

Edison's Polyform.

This is said to make a similar preparation (Ph. Era):

Chloral hydrate	av.oz. 1
Camphor	av.oz. 1
Morphine sulphate	gr. 8
Chloroform	fl.oz. 1
Ether	fl.oz. 4
Alcohol	fl.oz. 6
Oil of peppermint	fl.dr. 1

Edwards' Alterative and Tonic Bitters.

Fluid extract of hop	fl.oz. 1
Fluid extract of red cinchona	fl.dr. 4
Fluid extract of sarsaparilla	fl.dr. 8
Fluid extract of hydrastis	fl.dr. 8
Fluid extract of podophyllum	fl.dr. 2
Oil of wintergreen	drops 24
Oil of sassafras	drops 12
Oil of peppermint	drops 8
Oil of lemon	drops 8
Sugar	av.oz. 6
Alcohol	fl.oz. 16
Water, enough to make	fl.oz. 96

Mix, dissolve the sugar and strain.—Era Form.

Egyptian Eye Salve.

This is said to be composed of the following (N. I.):

White resin.....	av.oz. 12
Burgundy pitch.....	av.oz. 1
Yellow wax.....	av.oz. 1
Mutton suet.....	av.oz. 1
Venice turpentine.....	av.oz. 1
Balsam of fir.....	av.oz. 1

Electric Headache Cures.

These all consist essentially of an alcoholic solution of essential oil of mustard, which is usually sprinkled on a small tuft of cotton inclosed in a wide-mouthed bottle. The twisted wires in these bottles are placed there simply to delude a gullible public.

Elepizone.

Magnesium bromide.....	gr. 180
Sodium bromide.....	gr. 180
Water.....	fl.oz. 2½
Oil of cassia.....	drops 2
Simple syrup, enough to make	fl.oz. 4

—N. I.

Elixir of Lactopeptine.

The formulas in Part I, under the heading Compound Elixir of Pepsin, may furnish similar preparations.

Elixir Nutrans.

According to the makers' statements, the following and the next have like essential constituents in like proportions:

Fluid extract of coca.....	fl.dr. 5½
Fluid extract of damiana.....	fl.oz. 1
Fluid extract of kola.....	fl.dr. 5½
Fluid extract of saw palmetto.....	fl.oz. 1
Extract of beef.....	gr. 256
Simple elixir.....	fl.oz. 13½

Mix, dissolve the extract by agitation, and filter through purified talcum.

The published formula gives 2 ounces of fresh beef to the fluidounce.

Elixir Purgans.

Fluid extract of cascara sagrada	fl.oz. 2
Fluid extract of senna, deodorized.....	fl.oz. 1
Fluid extract of wahoo.....	fl.oz. 1
Fluid extract of blue flag.....	fl.dr. 4
Fluid extract of henbane leaves.....	fl.dr. 4
Simple elixir.....	fl.oz. 11

Elixir of Salicylic Acid, Compound.

See above in Part I.

Elixir Six Aperiens.

According to the statement of composition made by the manufacturers, the following yields a preparation having similar essential constituents in about the same proportions:

Fluid extract of cascara sagrada	fl.oz. 1
Fluid extract of podophyllum.....	fl.oz. 1
Fluid extract of dandelion.....	fl.oz. 1
Fluid extract of butternut.....	fl.oz. 1
Fluid extract of senna.....	fl.oz. 2
Rochelle salt.....	av.oz. 2¼
Simple elixir, enough to make.....	fl.oz. 16

Elixir Six Bromides.

According to the statement of composition by the manufacturers, the following contains like essential constituents in about the same proportions, the two last items being given in the advertisements simply as "cannabis indica and aromatics:"

Potassium bromide.....	gr. 640
Sodium bromide.....	gr. 640
Ammonium bromide.....	gr. 884
Calcium bromide.....	gr. 192
Lithium bromide.....	gr. 64
Iron bromide.....	gr. 64
Tincture of cannabis indica.....	fl.oz. 1
Simple elixir, enough to make.....	fl.oz. 16

Elixir Six Hypophosphites.

According to the statement of composition by the manufacturers, the following has like constituents in about the same proportions:

Iron hypophosphite.....	gr. 82
Calcium hypophosphite.....	gr. 48
Manganese hypophosphite.....	gr. 16
Potassium hypophosphite.....	gr. 82
Quinine sulphate.....	gr. 16
Strychnine sulphate.....	gr. 1
Potassium citrate.....	gr. 60
Sugar.....	av.oz. 4
Alcohol.....	fl.oz. 4
Compound spirit of orange.....	fl.dr. 4
Water, enough to make.....	fl.oz. 16

Dissolve the iron and manganese hypophosphites and potassium citrate in 2 fluid-ounces of water by the aid of heat, also the calcium and potassium hypophosphites in the same amount of water, and also the alkaloidal salts in a similar amount of water. Mix all three solutions, let stand for 24 hours, filter, dissolve the sugar in the filtrate, add the alcohol containing the spirit, and finally add the remainder of the water.

Elixir of Six Iodides.

The preparation of the same name in Part I has like essential constituents in about the same proportions.

Ely's Cream Balm.

These two widely different formulas have been published (W. D. and N. I.):

I.

Bismuth carbonate.....	gr. 15
Thymol.....	gr. 8
Oil of wintergreen.....	drops 2
Petrolatum.....	gr. 480

II.

White wax.....	gr. 60
Paraffin wax.....	gr. 80
Sweet almond oil.....	fl.dr. 2
Petrolatum.....	gr. 240
Nitrate of sodium.....	gr. 80
Water.....	fl.dr. ½
Oil of lemon.....	drops 10
Oil of orange.....	drops 2

Eno's Fruit Salt.

Both of the following are said to resemble the original:

I.

Rochelle salt.....	av.oz. 2¼
Tartaric acid.....	av.oz. 3¼
Sodium bicarbonate.....	av.oz. 8¾

—N. I.

II.

Magnesium sulphate.....	av.oz. 2
Magnesium citrate.....	av.oz. 2
Potassium bitartrate.....	av.oz. 2
Sodium bicarbonate.....	av.oz. 2
Tartaric acid.....	av.oz. 2
Powdered sugar.....	av.oz. 4

Thoroughly dry, mix and preserve in well-stoppered bottles.—Monthly Mag. Phar.

Eulyptol.

Carbolic acid.....	part 1
Oil of eucalyptus.....	part 1
Salicylic acid.....	parts 6

—Schmelz.

Eureka Dental Anæsthetic.

This contains 8¼ per cent of cocaine hydrochlorate with some carbolic acid and oil of rose.—Sadtler.

Euthymol.

Lister's Antiseptic Solution, Part I, is of a similar type.

Esencia de Calisaya.

Calisaya bark, moderately coarse powder.....	av.oz. 8
Calcium oxide.....	gr. 280
Water.....	fl.oz. 2
Cinnamon water.....	fl.oz. 10½
Simple syrup.....	fl.oz. 10½
Aromatic spirit.....	fl.oz. 1½
Purified talcum.....	av.oz. ½
Alcohol.....	
Diluted sulphuric acid, of each, sufficient	

Slake the quicklime with the water, incorporate the bark, and dry the mixture. Then pack in a percolator and exhaust with hot alcohol so as to obtain 9½ fluidounces of percolate. If the alcohol used be insufficient to secure exhaustion of the drug, more may be added, the excess to be removed subsequently by evaporation or distillation. To the percolate add enough of the acid to precipitate all of the calcium, set aside for ten days, filter, add the remaining ingredients, let stand a few days, agitating frequently, and filter, returning the first portions of the filtrate until the liquid runs through clear.

Espey's Fragrant Cream.

The following is similar:

Tragacanth, powder.....	gr. 120
Glycerin.....	fl.oz. 8
Alcohol.....	fl.oz. 4
Water.....	fl.oz. 4
Oils of lavender, bergamot and rosemary.....	sufficient to perfume

Essence of Pepsin.

See Part I.

Exodyne.

Acetanilid.....	parts 18
Sodium salicylate.....	part 1
Sodium bicarbonate.....	part 1

—Goldman.

Febriline. (Tasteless Syrup of Amorphous Quinine—Lyons.)

Advertised as the active principle of amorphous quinine, each teaspoonful equaling 2 grains of the sulphate. This is said to yield a similar result:

Quinidine suspended in syrup, about 2 grains in 1 fluidounce, and flavored with spirit of lemon.—Eccles.

Fellows' Syrup of Hypophosphites.

The manufacturers state that it contains potash, lime, iron, manganese, quinine, strychnine and phosphorus; the whole combined in the form of a syrup with a slightly alkaline reaction. The formula below is based upon analysis and is claimed to furnish a preparation essentially similar to the original:

Calcium hypophosphite.....	gr. 64
Potassium hypophosphite.....	gr. 24
Iron sulphate.....	gr. 24
Manganese sulphate.....	gr. 16
Quinine sulphate.....	gr. 7
Strychnine sulphate.....	gr. 1
Syrupy glucose.....	av.oz. 8
Simple syrup.....	fl.oz. 8
Water, enough to make.....	fl.oz. 16

Dissolve the calcium and potassium hypophosphites in 2 fluidounces of water. Add to 1 fluidounce of the water 8 fluidrams of the syrup and dissolve in the mixture, by the aid of heat, the remainder of the salts. Mix the solutions, set aside for a few hours, filter into a bottle containing the remainder of the syrup, wash the filter with 1 fluidounce of boiling water, to the liquid add the glucose and then enough water to make 16 fluidounces.

Flagg's Relief.

Oil of clove.....	fl.oz. 2
Oil of saffrafrs.....	fl.oz. 4
Spirit of camphor.....	fl.oz. 8

—J. J. Pierson.

Frelich's Tonic. (Phosphorized Cerebro-Spinal Tonic.)

According to the statement of composition by the manufacturers, the following contains the same essential constituents in about the same proportions:

Fluid extract of nux vomica....	fl.dr. 2½
Fluid extract of ignatia.....	fl.dr. 1¼
Fluid extract of yellow cinchona	fl.oz. 6¼
Fluid extract of German chamomile.....	fl.oz. 2¼
Fluid extract of gentian.....	fl.dr. 1
Fluid extract of bitter orange peel.....	drops 15
Fluid extract of columbo.....	drops 40
Fluid extract of cardamom....	drops 15
Spirit of phosphorus.....	fl.oz. 7½
Oil of orange.....	drops 2
Oil of clove.....	drop 1
Oil of cassia.....	drop 1
Simple syrup.....	fl.oz. 4

Frey's Vermifuge.

Castor oil.....	fl.oz. 1
Aromatic syrup of rhubarb.....	fl.oz. 1
Oil of wormseed.....	drops 80
Croton oil.....	drops 8

—Kilner's Form.

Fruit Salt or Saline.

See Tarrant's Aperient, or Eno's Fruit Salt.

Fluid Hydrastis.

This is a non-alcoholic water-miscible preparation of hydrastis, probably similar to Glycerite of Hydrastis, Part I.

Ford's Balsam of Hoarhound.

Hoarhound.....	av.oz. 3½
Licorice root.....	av.oz. 3½
Water.....	fl.oz. 16
Camphor.....	gr. 75
Opium.....	gr. 60
Benzoin.....	gr. 60
Squill.....	gr. 120
Oil of anise.....	fl.dr. 1
Alcohol.....	fl.oz. 24
Honey.....	av.oz. 3½

Macerate the hoarhound and licorice with the water for 12 hours, decant 12 fluidounces, to this add the remaining ingredients except the honey, macerate 7 days, strain, and add the honey.—N. I.

Fosgate's Anodyne Cordial.

Fluid extract of rhubarb.....	fl.dr. 5
Fluid extract of rhatany.....	fl.dr. 2
Fluid extract of ginger.....	drops 6
Paregoric.....	fl.dr. 1
Simple syrup.....	fl.dr. 1
Diluted alcohol.....	fl.dr. 5

—N. I.

Fossilin.

A petroleum product similar to petrolatum.—Coblentz.

Franck's Grains de Sante.

Aloes.....	parts 4
Jalap.....	parts 4
Rhubarb.....	part 1
Syrup of wormwood.....	sufficient

Make into 2-grain pills.—Cadet.

Gelitol.

An ointment base consisting of a mixture of oil, glycerin, gelatin and water.—Helbing's Mat. Med.

Gargling Oil.

The following from "Salmon's Compendium" appears to yield a similar product:

Crude petroleum.....	f.oz.	3¼
Ammonia water.....	f.oz.	1½
Soft soap.....	av.oz.	4
Benzin.....	f.oz.	4
Oil of amber, crude.....	f.dr.	4
Tincture of iodine.....	f.dr.	2
Water.....	f.oz.	20

Mix the petroleum and soap, add the ammonia water, oil of amber and tincture of iodine and mix thoroughly. Then add the benzin and finally the water.

Giles' Iodide of Ammonia Liniment.

Iodine.....	gr.	15
Alcohol.....	f.oz.	8
Camphor.....	gr.	120
Oil of lavender.....	f.dr.	1
Oil of rosemary.....	f.dr.	1
Water of ammonia.....	f.oz.	1

—D. C.

Gilt Edge Butter Compound.

This contains 80 per cent of pepsin and 70 per cent of hydrous sodium sulphate, besides a trace of pink coloring matter.—Wiley.

Gluten Suppositories.

These consist of cacao butter containing 10 per cent of wheat flour.—Vulpius.

Glycerole Yerbinè Compound.

This contains the same essential ingredients in the same proportions as are claimed for a preparation of the same name on the market:

Yerba santa.....	av.oz.	8¼
Licorice.....	av.oz.	8¼
Grindelia.....	gr.	480
Wild cherry.....	gr.	480
Potassium bromide.....	gr.	120
Pine tar.....	gr.	45
Potassium carbonate.....	gr.	40
Salicylic acid.....	gr.	83
Alcohol,		
Water,		
Glycerin.....	of each,	sufficient

Mix the yerba santa, licorice, grindelia, and wild cherry to moderately fine powder, add the potassium carbonate, and extract by percolation so as to obtain 16 fluidounces of percolate, using as a menstruum a mixture of equal volumes of alcohol, water and glycerin. To the percolate add the potassium bromide, tar and salicylic acid, set aside for several hours, agitating occasionally, and filter.

Glycoline.

This is a liquid petrolatum, according to the manufacturers' statement.

Glyco-Thymoline. (Kress.)

Each fluidounce is said to contain sodium 24, boric acid 4, benzoin 4, salicylic acid 0.88, eucalyptol 0.88, Thymoline 0.17, betula lenta 0.08, menthol 0.08, pinus pumilio 0.17, glycerin and solvents sufficient. This does not differ materially from Lister's Antiseptic Fluid, Part I, containing, in addition, oil of pinus pumilio. Wild indigo is replaced by red birch.

Glymol.

This is claimed to be a liquid hydrocarbon obtained from petroleum.

Godfrey's Cordial.

Oil of sassafras.....	drops	6
Tincture of opium.....	f.dr.	4¼
Alcohol.....	f.dr.	6
Potassium carbonate.....	gr.	60
Molasses.....	f.oz.	5
Water.....	enough to make	f.oz. 16

Mix the tincture of opium with the alcohol in which the oil has previously been dissolved. Dissolve the potassium carbonate in 8 fluidounces of water, mix this with the molasses, add the mixture first prepared, and then enough water to make 16 fluidounces; allow the mixture to stand until it has become clear, and decant the clear liquid which is to be used.—N. F.

Gombault's Caustic Balsam.

This is said to consist of about the following (N. I.):

Oil of red thyme.....	parts	8
Oil of amber, rectified.....	parts	8
Oil of rosemary.....	parts	10
Camphor.....	parts	20
Alcohol.....	parts	80
Sulphuric acid.....	parts	90
Oil of turpentine.....	parts	840
Sulphurated oil.....	parts	2,190

Mix the ingredients properly, stirring the acid into the other liquids mixed, and allow to cool.

Gouraud's Oriental Oream.

This consists of calomel and water, about 89 grains of the former to 1 fluidounce of the latter.—N. I.

Graham's Cucumber and Elder Flower Cream.

Sweet almond oil	fl.oz. 5
Saturated aqueous solution of borax	fl.oz. 1
Oil of lemon	drops 16
Oil of bergamot	drops 8
Oil of bitter almond	drop 1

—Can. Dr.

Gray's Glycerin Tonic Compound.

Each fluid half-ounce is stated to contain dilute phosphoric acid 12 minims, gentian root 10 grains extract of taraxacum 15 grains, glycerin 80 minims, sherry wine 80 minims, carminatives q. s. An essentially similar preparation is yielded by the following formula:

Compound fl. ext. of gentian	fl.oz. 1
Fluid extract of dandelion	fl.oz. 1
Dilute phosphoric acid	m. 884
Glycerin	fl.oz. 5
Sherry wine, enough to make	fl.oz. 16

Gray's Specific Pills.

Nearly all of these "specific" pills are composed (W. D.) of asafetida with a little camphor and sometimes hops, or lupulin, e. g.:

Asafetida	gr. 3
Camphor	gr. 1
Lupulin	gr. ½

The "specific action" is in the direction of an anaphrodisiac.

Green's August Flower.

The following produces a similar preparation (Coblentz):

Rhubarb	gr. 860
Golden seal	gr. 90
Cape aloes	gr. 16
Potassium carbonate	gr. 120
Peppermint	gr. 120
Capsicum	gr. 5
Alcohol	fl.oz. 3
Sugar	av.oz. 8
Water	fl.oz. 10

Macerate the drugs and the potassium carbonate in the alcohol and water for several days, agitating occasionally, then filter, add sufficient alcohol through the filter to make the filtrate measure 16 fluidounces and in the latter dissolve the sugar.

Gurania.

A correspondent of the Western Druggist says a mixture of 1 part of caffeine and 2 parts of sodium bicarbonate closely resembles the above.

Green's Nervura.

Fisher states (A. D.) that this is similar to the following:

Coca	av.oz. 2
Damiana	av.oz. 2
Gentian	av.oz. 2
Potassium bromide	gr. 210
Sodium salicylate	gr. 120
Dandelion	av.oz. 2
Alcohol	fl.oz. 8
Glycerin	fl.oz. 4
Water	enough to make fl.oz. 32

Grind the vegetable drugs to powder; add the alcohol and glycerin with an equal measure of water; macerate 24 hours, then percolate, adding enough alcohol and water in the proportion given to make 32 fluidounces, in which the sodium and potassium salts are to be dissolved.

Grimault's Matico Injection.

Made by dissolving 8 grains of copper sulphate in 16 fluidounces of infusion of matico, the latter being prepared from 1 ounce of leaves.—Wittstein.

Haarlem Oil.

I.	Balsam of sulphur	fl.oz. 1
	Oil of turpentine	fl.oz. 5
II.	Balsam of sulphur	fl.oz. 3
	Barbadoes petroleum	fl.oz. 1
	Crude oil of amber	fl.oz. 1½
	Oil of turpentine	fl.oz. 8
	Linseed oil	fl.oz. 4

Haas' Hog Cholera Remedy.

According to a report of the U. S. Dept. of Agriculture, the following is probably the composition of this remedy:

Powdered soap	parts 10
Potassium carbonate	parts 5
Red ochre	parts 12
Chalk	parts 50
Quicklime	parts 10
Calcined magnesia	parts 13

Hagan's Magnolia Balm.

The following is said to make a similar preparation:

Zinc oxide	av.oz. ½
Glycerin	fl.oz. 1½
Water	fl.oz. 2
Carmine	gr. ¼
Oil of bergamot	drop 1
Oil of lemon	drop 1

—N. I.

Haines' Golden Specific.

A formula for producing a preparation said to resemble the original was contributed to the D. C.:

Bayberry root bark.....	parts 16
Ginger.....	parts 8
Capsicum.....	part 1

Reduce to fine powder and mix thoroughly.

Hair's Asthma Remedy.

The following is said to resemble the original (N. I.):

Potassium iodide.....	av.oz. 1
Tar water.....	fl.oz. 16
Caramel.....	sufficient to color light brown

Hall's Hair Renewer.

The following gives similar results (N. I.):

Lead acetate.....	gr. 60
Precipitated sulphur.....	gr. 60
Glycerin.....	fl.oz. 8
Sodium chloride.....	gr. 120
Bay rum.....	fl.oz. 2
Jamaica rum.....	fl.oz. 4
Water.....	fl.oz. 16

Hamlin's Wizard Oil.

I.

Spirit of camphor.....	fl.oz. 1
Spirit of ammonia.....	fl. dr. 4
Oil of sassafras.....	fl. dr. 4
Oil of clove.....	fl. dr. 2
Chloroform.....	fl. dr. 4
Oil of turpentine.....	fl. dr. 4
Alcohol.....	enough to make fl.oz. 5

—J. J. Pierson.

Harter's Wild Cherry Bitters.

The following is said to make a preparation similar to the original (Ind. Ph. and D. C.):

Wild cherry bark.....	av.oz. 8
Yellow cinchona bark.....	av.oz. 1
Orange peel.....	av.oz. 2
Cardamom seed.....	av.oz. 1
Canada snake root.....	av.oz. ½
Diluted alcohol.....	sufficient
Honey.....	fl.oz. 16
Syrup.....	fl.oz. 16

Percolate the drugs in moderately fine powder with diluted alcohol, and when 96 fluidounces are obtained, add the honey and syrup.

Hartman's Crimson Salt.

Borax.....	part 1
Potassium permanganate.....	part 1
Salt (common).....	parts 6
Alum.....	parts 8

—Frercksen.

Hayden's Viburnum Compound.

According to the statement of composition by the manufacturers, the following contains like essential constituents:

Cramp bark.....	av.oz. 4
Cassia bark.....	av.oz. 2
Sculicap.....	av.oz. 1
Wild yam.....	av.oz. 1
Cloves.....	av.oz. ½
Alcohol,	
Water,	
Glycerin.....	of each, sufficient

Mix the drugs, reduce to powder, and extract with a menstruum composed of 1 volume of glycerin, 1 of water, and 2 of alcohol so as to obtain 32 fluidounces of product.

Headine.

Acetanilid.....	parts 7
Sodium bicarbonate.....	parts 3

—Dr. Schneider.

Heiskell's Fetter Ointment.

This is said (W. D.) to be cerate of subacetate of lead.

Helonia Tablets.

According to the statement of composition by the manufacturers, each tablet may be computed to contain essentially the following ingredients:

Extract of helonias.....	gr. ½
Extract of henbane.....	gr. 1
Extract of opium.....	gr. ¼
Tannic acid.....	gr. 2
Salicylic acid.....	gr. 1
Boric acid.....	gr. 8
Alum.....	gr. 1
Thymol.....	gr. 1
Eucalyptol.....	gr. 1

The published formula does not specify the amounts of alum, thymol and eucalyptol.

Hemicranine.

Phenacetine.....	parts 5
Caffeine.....	part 1
Citric acid.....	part 1

Henry's Carbolic Salve.

Carbolic acid.....	gr. 5
Resin cerate.....	gr. 270
Oil of bergamot.....	drops 2
Oil of lavender.....	drop 1

Henry's Magnesia.

This is heavy calcined magnesia.

Henry's Tri-Iodides. (Solution of Tri-Iodides—Solution of Triple Hydroiodates.)

The published formula says that each table-spoonful contains as iodides of their alkaloids the active constituents of 80 grains each of colchicum seed, poke-root and bittersweet and 10 grains of sodium salicylate. According to this the formula below approximately represents the preparation:

Fluid extract of colchicum seed. fl.oz.	1
Fluid extract of poke-root. . . fl.oz.	1
Fluid extract of bittersweet. . . fl.oz.	1
Potassium iodide. gr.	64
Sodium salicylate. gr.	820
Simple elixir, enough to make fl.oz.	16

Hensel's Tonicum. (Essentia Tonica Hensel.)

Formic acid (sp. gr. 1.200). . . fl.dr.	8 1/4
Marble dust. gr.	140
Ferrous sulphate, crystal. . . . gr.	96
Solution of tersulphate of iron fl.dr.	6 1/2
Glacial acetic acid. fl.oz.	8 1/4
Alcohol. fl.oz.	5
Acetic ether. fl.dr.	1
Water. fl.oz.	6 1/2

Dissolve the marble dust in 3 1/4 fluidounces of water containing the formic acid; also dissolve the ferrous sulphate in the remainder of the water and add the solution of tersulphate of iron and the acetic acid. Mix the two liquids, add the alcohol, allow the calcium sulphate to precipitate, filter, and to the filtrate add the acetic acid.—W. D.

Himrod's Asthma Cure.

Lobelia herb. av.oz.	2
Stramonium leaves. av.oz.	2
Potassium nitrate. av.oz.	2
Black tea. av.oz.	2

Powder, mix and sift.—Contributed to W. D.

Hinds' Honey and Almond Cream.

This formula G. H. Rose has contributed to D. C. as furnishing a similar preparation:

Cold cream, U. S. P. av.oz.	1
Sweet almond oil. fl.oz.	1
Glycerin. fl.oz.	1
Boric acid. av.oz.	1
Solution of soda. fl.oz.	2 1/2
Mucilage of quince seed. . . . fl.oz.	5
Water, enough to make. . . . fl.oz.	40
Oil of bitter almond	
Oil of rose, of each, sufficient to perfume.	

Heat the cold cream, oil and solution of soda together, stirring constantly until an emulsion is formed; then warm together the glycerin, acid, mucilage, and about 30 fluidounces of water, mix with the emulsion, stir until cold, and make to 40 fluidounces by adding more water. Lastly add the volatile oils.

Hoff's Malt Extract.

The following produces a good preparation of its class:

Althæa. av.oz.	8
Coriander. av.oz.	8
Star anise. av.oz.	4
Grains of paradise. av.oz.	4
Simple syrup. fl.oz.	16
Glycerin. fl.oz.	16
Oil of lemon. drops	2
Oil of orange. drop	1
Caramel. av.oz.	8
Water, boiling. gal.	1 1/2

The drugs are mixed, reduced to coarse powder, and infused with the water; to the infusion add the remainder of the ingredients, and mix well; 16 fluidounces of this liquid is added to one barrel of ordinary brewers' beer.

Holloway's Ointment. An ointment of this type is the following:

Fresh butter, no water or salt, av.oz.	12
Yellow wax. av.oz.	4
Resin. av.oz.	3
Vinegar of cantharides. . . . fl.oz.	1
Balsam of fir. av.oz.	1
Expressed oil of mace. gr.	80
Peru balsam. drops	12

Melt the butter, wax and resin, add the vinegar, allow the whole to simmer for 10 or 12 minutes, allow to cool somewhat, add the remaining ingredients, and stir until cool.

Holloway's Pills.

Aloes. gr.	86
Jalap. gr.	18
Ginger. gr.	18
Myrrh. gr.	18
Mix and make 80 pills.—N. I.	

Horner's Rheumatic Lightning.

Fluid extract of colchicum seed fl.dr.	1
Fluid extract of black cohosh. . fl.dr.	4 1/4
Potassium acetate. gr.	128
Sodium salicylate. gr.	256
Alcohol. fl.oz.	2 1/2
Water, enough to make. . . . fl.oz.	16

—N. I.

Hooper's Female Pills.

The following is apparently similar:

Aloes, socotrine.....	gr. 48
Dried sulphate of iron.....	gr. 18
Extract of black hellebore.....	gr. 12
Myrrh.....	gr. 12
Soap.....	gr. 12
Powdered canella.....	gr. 6
Powdered ginger.....	gr. 6

Beat them well together into a mass, with syrup or water, and divide into pills, each containing $2\frac{1}{2}$ grains.

Hop Bitters.

The following makes a good hop bitters:

Hops.....	av.oz. 4
Orange peel.....	av.oz. 2
Dandelion.....	av.oz. 2
Buchu.....	av.oz. 1
Mandrake.....	av.oz. $\frac{1}{2}$
Sugar.....	av.oz. 16
Alcohol.....	fl.oz. 16
Water, to make.....	pints 8

Macerate the drugs in coarse powder in the alcohol and 7 pints of water, at a warm temperature, for 8 days. Express and dissolve the sugar in the liquid, to which add water, if necessary, to make 8 pints, and strain.—W. D.

Horsford's Acid Phosphate.

Solution of Acid Phosphates, Part I, is an excellent preparation containing acid phosphates.

Hostetter's Bitters.

The following is said to produce a similar article (D. C.):

Gentian.....	gr. 15
Blessed thistle.....	gr. 15
Calamus.....	gr. 15
Orange peel.....	gr. 60
Oil of orange.....	drop 1
Sugar.....	gr. 320
Alcohol,	
Water, of each enough to make fl.oz.	16

Mix the drugs, extract with a menstruum consisting of 8 volumes of alcohol and 2 of water, and in the liquid obtained dissolve the sugar and oil of orange.

Hudson's Honey of Elm.

This is a tooth paste containing precipitated chalk, powdered pumice stone, glycerin, oil of clove, oil of wintergreen, and simple syrup.—Era Form.

Hubert's Malvina Cream.

The following will make a preparation resembling the original (N. I.):

White petrolatum.....	av.oz. 6
White wax.....	gr. 500
Spermaceti.....	gr. 300
Bismuth oxychloride.....	gr. 400
Mercuric chloride.....	gr. 5
Oil of rose.....	drops 6
Oil of bitter almond.....	drop 1

Warm together the petrolatum, white wax and spermaceti until melted. While cooling incorporate the bismuth oxychloride and the mercuric chloride, this last previously dissolved in a little alcohol, and when nearly cold stir in the volatile oils.

Hubert's Malvina Lotion.

This is said (A. D.) to be an emulsion of almond with rose water and containing oxide of zinc and corrosive sublimate. A formula for such a preparation may be constructed as follows:

Mercuric chloride.....	gr. 2
Zinc oxide.....	dr. 3
Emulsion of almonds.....	pint

Make the emulsion from 120 grains of sweet almonds with rose water.

Husband's Magnesia.

This is heavy calcined magnesia.

Hydroleine.

This contains approximately the same ingredients in the same essential proportions as are claimed for the original, and may be presumed to yield a similar result:

Cod liver oil.....	fl.oz. 8
Solution of soda.....	fl.dr. $5\frac{1}{2}$
Boric acid.....	gr. 12
Hydrochloric acid.....	gr. $2\frac{1}{2}$
Saccharated pancreatin.....	gr. 240
Water, enough to make.....	fl.oz. 12

Idiaton.

Its approximate composition is given (according to W. D.) as follows:

Venice turpentine.....	part 1
Mastic.....	part 1
Chloroform.....	parts 8
Spirit of ammonia.....	parts 2
Oil of clove.....	parts 2
Oil of mustard (volatile).....	a small quantity

This is a toothache remedy sold largely in Germany.

Injection Brou.

Zinc sulphate.....	gr. 15
Lead acetate.....	gr. 80
Tincture of catechu.....	fl.dr. 1
Crocatated tincture of opium.....	fl.dr. 1
Water, distilled.....	fl.oz. 6

—Hager.

Iodia.

This is claimed to be a combination of active principles of *stillingia*, *saxifraga*, *menispermum*, and aromatics, each fluidram containing 5 grains potassium iodide and 3 grains of iron phosphate. Compound Elixir of Potassium Iodide, Part I, appears to be similar in character.

Iodophenochloral.

Tincture of iodine.....	part 1
Carbolic acid.....	part 1
Chloral hydrate.....	part 1

Jayne's Tonic Vermifuge.

This contains sodium santoninate, pink-root, jalap, peppermint, erigeron, winter-green, sugar and water.—N. I.

Jayne's Expectorant.

The following will produce a similar preparation (Kilner's Form.):

Syrup of squill.....	fl.oz. 2
Tincture of tolu.....	fl.oz. 1½
Tincture of lobelia.....	fl.dr. 1
Tincture of digitalis.....	fl.dr. 1
Tincture of opium.....	fl.dr. 2
Spirit of camphor.....	fl.dr. 1
Wine of ipecac.....	fl.dr. 2
Tartar emetic.....	gr. 2

Dissolve the tartar emetic in the tincture of lobelia or digitalis, and mix with the remaining ingredients.

Jesson's Dental Anæsthetic.

This contains about 2.6 per cent of cocaine hydrochlorate with some carbolic acid and oil of rose.—Sadtler.

Jewsbury & Brown's Oriental Tooth Paste.

This, according to Nelson's "Handbook," makes a similar preparation:

Carmine.....	gr. 60
Water.....	fl.dr. 2
Honey.....	av.oz. 6
Oil of peppermint.....	drops 5
Oil of anise.....	drops 5
Oil of orange.....	drops 10
Oil of wintergreen.....	drops 10
Precipitated chalk.....	sufficient

Rub together, using enough of the chalk to make a firm paste.

Kalydor.

Bitter almonds, blanched.....	av.oz. 10
Rose water.....	fl.oz. 50
Corrosive sublimate.....	gr. 5
Ammonium chloride.....	av.oz. ¼
Cherry laurel water.....	fl.oz. 1½
Alcohol.....	fl.oz. 1½

Mix an emulsion of the almonds and the rose water, strain, add the ammonium chloride and cherry laurel water, and then the corrosive sublimate dissolved in the alcohol.—Nat. Dr.

Kaputine.

This is chiefly a colored acetanilid.—British Medical Journal.

Kendall's Spavin Cure.

The following makes a preparation similar to the original (N. I.):

Oil of rosemary.....	fl.dr. 1
Oil of turpentine.....	fl.oz. 1
Camphor.....	gr. 240
Petroleum oil (heavy).....	fl.dr. ½
Alcohol.....	fl.oz. 2
Iodine.....	gr. 125

Dissolve the iodine in a little alcohol and add it to the other ingredients, previously dissolved in the alcohol and water.

Kennedy's Medical Discovery.

This makes a similar preparation (N. I.):

Fluid extract of mandrake.....	fl.dr. 10
Fluid extract of dandelion.....	fl.oz. 1
Fluid extract of leptandra.....	fl.dr. 3
Alcohol.....	fl.oz. 5
Water, enough to make.....	fl.oz. 16

Kennedy's Pinus Canadensis (Dark).

The Fluid Extract of Pinus Canadensis, Part I, is presumably similar.

Kennedy's Pinus Canadensis (White).

Zinc sulphate.....	part 1
Glucose.....	parts 2
Water.....	parts 7
Hemlock oil.....	a few drops

—Tschepppe.

Kern's Insect Annihilator.

The following is said to resemble this mixture (W. D.):

Deodorized benzin.....	fl.oz. 16
Oil of cedar.....	fl.oz. 1
Oil of wintergreen.....	fl.oz. 1

This composition is certain destruction to cockroaches, bedbugs, fleas, ants, and other insects.

Kidneywort.

The dry preparation is a mixture of drugs, dandelion, hydrangea, etc., with roasted beans. The liquid preparation contains the extract of similar drugs.—Fenner's Form.

King's New Discovery.

According to the N. I., a similar preparation is made as follows:

Morphine sulphate.....	gr. 8
Sugar, granulated.....	av. oz. 14
Chloroform.....	drops 60
Tincture of white pine.....	fl. oz. 2
Fluid extract of ipecac.....	fl. dr. ½
Magnesium carbonate.....	dr. 2
Water.....	fl. oz. 7

Rub one ounce of sugar with ¼ ounce of magnesium carbonate, triturate with the tincture and fluid extract, gradually add the water with continued trituration. Filter, dissolve the morphine and sugar in the filtrate, strain and add the chloroform.

Kitchell's Liniment.

Water.....	parts 3
Ammonia water.....	part 1

Color with caramel.—J. Goldbach.

Kline's Great Nerve Restorer.

The following is said to make a similar preparation (Dr. R. C. McCann):

Ammonium bromide.....	gr. 180
Potassium bromide.....	av. oz. 3
Potassium bicarbonate.....	gr. 70
Tincture of columbo.....	fl. dr. 6
Water.....	fl. oz. 6

Koenig's Hamburg Breast Tea.

This is a mixture of cut licorice root, althea root, althea flowers, coltsfoot herb, red-poppy petals, mallow flowers, calendula flowers, and blind nettle flowers.—Ph. Rundsch.

Koenig's Hamburg Drops.

This is similar to Elixir of Long Life, Part I.—D. C.

Koenig's Hamburg Plaster.

Mother plaster.....	av. oz. 8
Suet.....	av. oz. ½
Black pitch.....	av. oz. ½
Amber.....	av. oz. 1
Peru balsam.....	gr. 45

Knox's Disinfecting Powder.

Chlorinated lime.....	av. oz. 4
Sodium chloride.....	av. oz. 12

Lactopeptine.

According to statement of composition by manufacturers, the following are the ingredients of a similar preparation:

Pepsin.....	gr. 48
Pancreatin.....	gr. 86
Diastase.....	gr. 8
Hydrochloric acid.....	drops 4
Lactic acid.....	drops 4
Milk sugar.....	gt. 240

Lactopeptine Elixir.

See Elixir of Lactopeptine.

Lactopeptine Elixir with Bismuth.

The following is an elixir containing lactopeptine and bismuth:

Ammonio-citrate of bismuth.....	gr. 128
Water.....	fl. oz. 2
Elixir of lactopeptine (prepared without acid).....	fl. oz. 14

Dissolve the bismuth salt in the water by the aid of a small amount of ammonia water, carefully avoiding any excess of the latter, and add this solution to the elixir.

Lactopeptine Elixir with Calisaya.

The following is an elixir containing lactopeptine and calisaya:

Elixir of lactopeptine.....	fl. oz. 14
Fluid extract of cinchona.....	fl. oz. 2

Lactopeptine Elixir with Calisaya, Iron and Bismuth.

The following is an elixir containing lactopeptine, calisaya, iron and bismuth:

Fluid extract of cinchona.....	fl. dr. 10
Iron pyrophosphate, soluble.....	gr. 182
Ammonio-citrate of bismuth.....	gr. 82
Water.....	fl. oz. 1½
Elixir of lactopeptine (prepared without acid).....	fl. oz. 13

Dissolve the bismuth in a small amount of water by the aid of a little ammonia, dissolve the iron salt in the remainder of the water, mix all, and filter.

Lactopeptine Elixir with Gentian and Chloride of Iron.

The following is an elixir containing lactopeptine, gentian and iron chloride:

Fluid extract of gentian.....	fl. dr. 2
Tincture of citro-chloride of iron.....	fl. oz. 2
Elixir of lactopeptine, enough to make.....	fl. oz. 16

Lactopeptine Elixir with Phosphate of Iron, Quinine and Strychnine.

The following is an elixir containing lactopeptine, iron phosphate, quinine and strychnine:

Quinine hydrochlorate.....	gr. 64
Strychnine sulphate.....	gr. 1
Iron phosphate, soluble.....	gr. 64
Water, distilled.....	fl.oz. 2
Elixir of lactopeptine (prepared without acid).....	fl.oz. 14

Lactopeptine Elixir with Strychnine and Bismuth.

The following is an elixir containing lactopeptine, strychnine and bismuth:

Ammonio-citrate of bismuth....	gr. 128
Strychnine sulphate.....	gr. 2
Water.....	fl.oz. 2
Water of ammonia.....	sufficient
Elixir of lactopeptine (prepared without acid).....	fl.oz. 14

Dissolve the bismuth salt in a small amount of water, adding some water of ammonia to insure complete solution, but avoiding any excess of the latter. Dissolve the strychnine salt in the remainder of the water, add this to the elixir, then add the bismuth solution, let the whole stand a few hours, and filter.

Lactopeptine, Liquid.

Lactopeptine.....	gr. 600
Distilled water.....	fl.oz. 10
Glycerin.....	fl.oz. 6

—D. C.

Lallemand's Gout Specific.

Extract of colchicum.....	gr. 60
Extract of opium.....	gr. 60
Potassium iodide.....	av.oz. 2
Potassium acetate.....	av.oz. 1
Water.....	fl.oz. 14
White wine.....	fl.oz. 2

—Era Form.

Laird's Bloom of Youth.

Zinc oxide.....	gr. 180
Precipitated chalk.....	gr. 180
Oil of bergamot.....	drops 2
Water.....	fl.oz. 3

Lavoline.

This is said to be purified liquid petrolatum.—Reg. Ph.

Laxol.

This is said to consist of castor oil sweetened with saccharin and flavored with peppermint.—Ph. Era.

Laubach's Eclectic Liniment.

Oil of turpentine.....	fl.oz. 1
Tincture of arnica flowers.....	fl.oz. 2
Stronger water of ammonia.....	fl.oz. 2
Soap liniment.....	fl.oz. 15
Oil of sassafras.....	m. 50
Oil of thyme.....	drops 16
Alcohol.....	fl.oz. 4

Liquor Sedans.

According to statements of composition by the manufacturers, Elixir of Black Haw Compound, Part I, produces a preparation having the essential constituents of a similar product.

Liquor Uterans.

According to the manufacturers, each fluid-ounce represents 55 grains of blackhaw, 28 grains of blue cohosh, 25 grains of Jamaica dogwood, and 55 grains of golden seal, with aromatics. An essentially similar preparation will be obtained by this formula:

Fluid extract of blackhaw.....	fl.oz. 1¼
Glycerite of hydrastis.....	fl.oz. 1¼
Fluid extract of blue cohosh.....	fl.oz. 1
Fluid extract of Jamaica dogwood.....	fl.oz. 1
Simple elixir, enough to make.....	fl.oz. 16

Listerine.

This is claimed to be the "essential antiseptic constituent of thyme, eucalyptus, baptisia, gaultheria, and mentha arvensis in combination. Each dram also contains 2 grains of refined and purified benzo-boracic acid." Formulas for several good antiseptic solutions are given under "Lister's Antiseptic Solution," Part I.

Listol.

This is dithymol diiodide, also known as annidalin and aristol.

Lithiated Hydrangea.

Each fluidram is claimed to represent 80 grains of fresh hydrangea and 8 grains of c. p. benzo-salicylate of lithia. The formula below is for a preparation of similar character:

Lithium salicylate.....	gr. 240
Lithium benzoate.....	gr. 120
Fluid extract of hydrangea.....	fl.oz. 3
Alcohol.....	fl.oz. 4
Water, enough to make.....	fl.oz. 16

Lloyd's Leontin.

This is a 1-per-cent solution of leontin in an alcoholic menstruum, according to the manufacturers' statement.

Lotsil.

Acetanilid.....	gr. 36
Sodium bicarbonate.....	gr. 12
Caffeine citrate.....	gr. 6
Camphor monobromide.....	gr. 6

Dispense either as powder or in 5-grain tablets.

Low's Magnetic Liniment.

The following makes a similar preparation (N. I.):

Oil of turpentine.....	f.oz. 1½
Tincture of capsicum.....	f.oz. 2
Spirit of camphor.....	f.oz. 16
Stronger water of ammonia.....	f.oz. 1½
Alcohol.....	f.oz. 8½
Oil of sassafras.....	m. 50
Fluid extract of sassafras.....	f.dr. 5

Luprine.

This is a mixture of powdered columbo, gentian and quassia.—Coblentz.

Lyon's Kathairon.

This is said (N. I.) to consist of substantially the following:

Alcohol.....	f.oz. 12
Castor oil.....	f.oz. 4
Tincture of cantharides.....	f.dr. 4
Tannic acid.....	gr. 80
Oil of citronella.....	f.dr. ½
Oil of bergamot.....	f.dr. ½
Oil of cloves.....	f.dr. ½
Oil of rosemary.....	drops 8
Oil of lavender flowers.....	drops 8

Mix and filter.

Lyon's Tooth Powder.

This contains soap, precipitated chalk, pumice stone and oil of wintergreen.—N. I.

McDade's Succus Alterans. (McDade's Prescription.)

This is claimed to be prepared from the fresh green drugs. The "Extract of Bamboo Brier" Part I, is of similar composition.

MacDougall's Disinfecting Powder.

This is prepared by adding crude carbolic acid to sodium sulphite.—Frerksen.

Maltine.

This is said to be prepared from malted barley, oats and wheat, equal parts, as described in Part I, for making Extract of Malt.

Maltine with Cascara Sagrada.

Fluid extract of cascara sagrada.....	f.oz. 2
Maltine.....	f.oz. 14

Maltine with Cod Liver Oil.

Cod liver oil.....	f.oz. 8
Maltine.....	f.oz. 7

Maltine, Ferrated.

Iron pyrophosphate, soluble.....	gr. 128
Water, hot.....	f.oz. 1
Maltine.....	f.oz. 15

Dissolve the iron salt in the water and add the maltine.

Maltine with Hypophosphites.

Calcium hypophosphite.....	gr. 48
Sodium hypophosphite.....	gr. 48
Iron hypophosphite.....	gr. 32
Potassium citrate.....	gr. 60
Water.....	f.oz. 1
Maltine.....	f.oz. 15

Dissolve the potassium citrate and iron hypophosphite in one-half fluidounce of water by the aid of heat, also the calcium and sodium hypophosphite in the same amount of water, and mix the two solutions with the maltine.

Maltine with Pepsin and Pancreatin.

Pepsin, saccharated.....	gr. 640
Pancreatin, saccharated.....	gr. 240
Maltine.....	f.oz. 16

Mix all by trituration.

Maltine with Iron Phosphate, Quinine and Strychnine.

Iron pyrophosphate.....	gr. 64
Quinine hydrochlorate.....	gr. 16
Strychnine sulphate.....	gr. 1½
Distilled water, hot.....	f.oz. 1
Maltine.....	f.oz. 15

Dissolve the iron and alkaloidal salts in the water and add to the maltine.

Mariani Wine of Coca.

The following makes a satisfactory wine of coca:

Coca leaves, coarse powder.....	av.oz. 1½
Alcohol.....	f.oz. 2
Sugar.....	gr. 330
Red wine.....	f.oz. 16

Mix the alcohol and wine, macerate the leaves in 4 fluidounces of this mixture in a moderately warm place for 24 hours, then transfer to a glass percolator, pass remainder of liquid slowly through the drug, and in the percolate dissolve the sugar.

Marienbad Reduction Pills.

Potassium bromide.....	10
Sodium bicarbonate.....	20
Extract of squill.....	20
Guaiac.....	40
Senega.....	40
Extract of taraxacum.....	sufficient

Divide into pills weighing $2\frac{1}{2}$ gr. each.—D.

Marrol.

This is said to consist of ox marrow, malt extract, and hop extract.—Coblentz.

McLean's Strengthening Cordial.

A similar preparation is said to be made as follows (Fenner's Form.):

Gentian.....	av.oz. 8
Columbo.....	av.oz. 8
Orange peel.....	av.oz. 2
Coriander.....	av.oz. 1
Serpentaria.....	av.oz. 1
Cardamom.....	av.oz. $\frac{1}{2}$
Whiskey.....	pints 7
Glycerin.....	fl.oz. 1
Water.....	sufficient

Mix the drugs, grind to powder and percolate with the whiskey mixed with the glycerin, and pass through the percolator enough water to make the percolate measure 1 gallon.

McMunn's Elixir of Opium.

The official deodorized tincture of opium is similar in character.

Medicamentum.

See Haarlem Oil.

Melachol.

Each fluidram, according to the manufacturers, contains 85 grains of the combined sodium phosphate, sodium nitrate and citric acid.

According to W. C. Wescott, the following yields a similar preparation:

Sodium nitrate.....	gr. 78
Citric acid.....	gr. 475
Sodium phosphate.....	av.oz. 8, gr. 150
Water, enough to make.....	fl.oz. 8

The mixture of salts and acid will liquefy and solution will be completed upon the addition of water.

Merrell's Vaginal Discs.

Powdered extract of helonias.....	gr. 12
Powdered extract of hydrastis.....	gr. 12
Powdered extract of henbane.....	gr. 6
Powdered opium.....	gr. 6
Thymol.....	gr. $1\frac{1}{2}$
Gallic acid.....	gr. 12
Boric acid.....	gr. 86
Tannic acid.....	gr. 24
Alum.....	gr. 86
Eucalyptol.....	gr. $1\frac{1}{2}$

Make into 12 compressed tablets.

Mexican Mustang Liniment.

The following makes a similar preparation (N. I.):

Soap.....	gr. 140
Water, warm.....	fl.oz. 14
Oil of turpentine.....	fl.dr. 2
Crude petroleum.....	fl.dr. 4
Oil of amber, crude.....	fl.dr. 2
Oil of thyme.....	fl.dr. 2
Kerosene.....	fl.oz. $1\frac{1}{2}$
Caustic potash.....	gr. 12

Dissolve the soap in the water and incorporate with the other ingredients.

Micajah Medicated Uterine Wafers.

This formula for a similar preparation has been contributed to a medical journal (W. D.):

Mercury bichloride.....	gr. $\frac{1}{4}$
Zinc sulphate.....	gr. 5
Bismuth subnitrate.....	gr. 15
Acacia.....	gr. 5
Carbolic acid.....	gr. 8
Water.....	sufficient

Migranin.

Citric acid.....	part 1
Caffeine.....	parts 9
Antipyrine.....	parts 90

Mollosin.

Yellow wax.....	part 1
Liquid petrolatum.....	parts 4

—Ph. Ztg.

Morrison's Pills.

Aloes.....	parts 5
Jalap resin.....	parts 5
Jalap root.....	parts 5
Marshmallow root.....	parts 5
Gamboge.....	parts 2
Scammony.....	part 1

Divide into pills, each to contain $\frac{1}{2}$ gr. aloes. Roll in cream of tartar.—Hager,

Murray's Infallible System Tonic.

Aloesgr. 50
Cinnamongr. 25
Licorice root.....gr. 25
Make into a mass with water, divide into 50 parts, and put into gelatin capsules.—N. I.

Murdock's Liquid Food.

This is said to consist of defibrinated blood with 15 per cent of whiskey and various tonics and astringents.

Naphthocresol.

This is a mixture of phenols and cresols dissolved in a solution of resin soap.

Naphthol Camphor. (Camphorated Naphthol.)

A syrupy liquid said to be prepared by fusing together 1 part of betanaphthol and 2 parts of camphor.

Nelason's Suppositories.

Calomel.....gr 12
Extract of belladonna.....gr. 3
Fluid extract of stramonium...m. 3
Cacao butter.....gr. 324
Make into 12 suppositories.

Neurosin.

A French preparation (in syrup or granule form) which contains calcium glycono-phosphate as the active ingredient.—Coblentz.

Neurosine.

It is claimed that each fluidram contains 5 grains each of c. p. bromides of potassium, sodium and ammonium, $\frac{1}{4}$ grain bromide zinc, $\frac{1}{4}$ grain each of extract belladonna and cannabis indica, 4 grains extract lupuli, and 5 minims fluid extract cascara, with aromatic elixirs. The formula below, based on the foregoing, is for a similar preparation:

Potassium bromide.....gr. 640
Sodium bromide.....gr. 640
Ammonium bromide.....gr 640
Zinc bromide.....gr. 16
Extract of belladonna.....gr. 2
Extract of cannabis indica.....gr. 2
Extract of hops.....gr. 512
Fluid extract of cascara sagrada fl.dr. 10½
Simple elixir, enough to make fl.oz. 16

Nichol's Compound Tasteless Cod Liver Oil.

See Wampole's Tasteless Cod Liver Oil.

Nichol's Elixir of Bark and Iron.

This preparation contains, according to the manufacturers, calisaya and protoxide of iron. A formula for a similar preparation is Elixir of Cinchona with Iron Protoxide, Part-J.

Norton's Chamomile Pills.

Extract of aloes, aqueous.....gr. 60
Extract of gentian.....gr. 180
Oil of chamomile.....drops 20
Make 60 pills.

Norwood's Tincture.

This is the same as the official tincture of veratrum viride.

Oculine.

A solution in ordinary water containing 1 per cent of boric acid and 5 per cent of glycerin.—Ph. Rundsch.

Odol.

Saccharin.....gr. 1
Salol.....gr. 80
Tincture of vanilla.....drops 24
Spirit of peppermint.....drops 88
Spirit of cumindrop 1
Alcohol, enough to make.....fl.oz. 4

Odontunder.

This contains 1.35 per cent of cocaine hydrochlorate with some carbolic acid, glycerin, oil of rose, and probably alcohol.—Sadtlir.

Osgood's Indian Cholagogue.

Quinine sulphate.....gr. 120
Fluid extract of culver's root..fl.dr. 2
Saturated tincture of stillingia..fl.oz. 4
Fluid extract of mandrake.....fl.dr. 3
Oil of sassafras.....drops 10
Oil of wintergreen.....drops 10
New Orleans molasses, enough to make.....fl.oz. 8
—Kilner's Form.

Oxygen Aque.

A colorless, odorless and tasteless liquid found to be water.—A. B. Prescott.

Oxygen, Compound.

A colorless aqueous solution of ammonium nitrate and lead nitrate, the two salts being in nearly equal proportions, and together forming about three per cent of the solution.—A. B. Prescott.

Oxygen, Compound, Green's.

An aqueous solution of ammonium nitrate with a very little lead nitrate.—A. B. Prescott.

Oxygen, Compound, Solid.

This is ammonium nitrate.—A. B. Prescott.

Oxygen, Compound, O'Leary's.

Contains alcohol, chloroform, bitter almond oil, balsam of tolu and red coloring matter.—A. B. Prescott.

Ozonized Water.

This is said to contain 1 or 2 parts of potassium permanganate dissolved in 500 parts of water.

Palmer's Invisible Powder.

This contains talcum with coloring.—Snow.

Palmer's Lily White Tablet.

Precipitated chalk.....av.oz. 17
Talcum.....av.oz. 23
—Snow.

Palmer's Lotion.

A similar preparation is said to be:

Corrosive sublimate.....gr. 8
Alum.....gr. 12
Water.....fl.oz. 16

Paine's Celery Compound.

A preparation, said to be similar, may be made by the following formula (D. C.):

Celery seed.....av.oz. 2
Red cinchona.....av.oz. 1
Orange peel.....av.oz. $\frac{1}{4}$
Coriander seed.....av.oz. $\frac{1}{4}$
Lemon peel.....av.oz. $\frac{1}{4}$
Hydrochloric acid.....m. 15
Alcohol.....fl.oz. 5
Glycerin.....fl.oz. 3
Water.....fl.oz. 4
Simple syrup.....fl.oz. 4

Grind the solids to moderately coarse powder, mix the acid and the water, add the glycerin and alcohol and in the menstruum so prepared macerate the powder for twenty-four hours; then percolate, adding enough alcohol and water in the proportion given to make 12 fluidounces. Finally add the syrup, and if necessary filter.

Pancropepsin.

The Compound Powder of Pepsin, Part I, has the same essential constituents as are claimed for this.

Pan-Peptic Tablets.

The composition as stated by the manufacturers is 1 grain each of pure pepsin and pure pancreatin, $\frac{1}{4}$ grain pure caffeine, and acid lactophosphate of calcium and celery. The formula below will furnish a composition essentially similar:

Pepsin.....gr. 12
Pancreatin.....gr. 12
Caffeine.....gr. 3
Apiol.....gr. 1
Calcium lactophosphate soluble.....gr. 86
Make into 12 tablets.

Papier Fayard.

Powdered cantharides.....gr. 480
Powdered euphorbium.....gr. 240
Alcohol.....fl.oz. 8
Venice turpentine.....av.oz. 3
White resin.....av.oz. $4\frac{1}{2}$

Extract the powdered drugs with the alcohol, melt the resin and turpentine, add the extract, and, with a brush, spread the mixture on paper while still warm.—Pharm.

Papine.

This is said to be the anodyne principle of opium, the narcotic and convulsive elements being eliminated, one fluidram representing the anodyne principle of $\frac{1}{8}$ grain of morphine. The following will yield a preparation conforming to these requirements.

Deodorized tincture of opium...fl.oz. $3\frac{1}{2}$
Simple elixir.....fl.oz. 18

Parker's Tonic.

The following is similar (N. I.):

Fluid extract of ginger.....fl.dr. 2
Fluid extract of sassafras.....drops 15
Fluid extract of capsicum.....drop 1
Oil of wintergreen.....drop 1
Sugar.....av.oz. $1\frac{1}{4}$
Water.....fl.dr. 10
Alcohol.....fl.dr. 18

Parsons' Local Anæsthetic.

Chloroform.....parts 6
Tincture of aconite.....parts 6
Tincture of capsicum.....parts 2
Tincture of pyrethrum.....part 1
Oil of clove.....part 1
Camphor.....part 1

Dissolve the camphor in the chloroform, then add oil of clove and then the tinctures.—Dr. Parsons.

Pasteurine.

This contains oils of cinnamon, eucalyptus, lemon and wintergreen dissolved in alcohol.

Peacock's Bromides. (Syrup of Bromides, Compound: Peacock.)

Claimed by the manufacturers to contain in each fluidram 15 grains of the combined c. p. bromides of potassium, sodium, calcium, ammonium and lithium. A compound of a similar character is the following:

Potassium bromide.....	gr. 384
Sodium bromide.....	gr. 384
Ammonium bromide.....	gr. 384
Citric acid.....	gr. 16
Tincture of vanilla.....	fl.dr. 4
Compound tincture of cudbear.....	fl.oz. 1½
Simple syrup.....	fl.oz. 8
Water, enough to make.....	fl.oz. 16

Dissolve, let stand for twenty-four hours and filter.

Peckham's Balsam.

White resin.....	av.oz. 4
Oil of turpentine.....	fl.oz. 4

Melt the resin, remove from the fire, add the oil and mix well together.—Fenner's Form.

Pepsin and Wafer Ash.

Pepsin, pure.....	gr. 128
Fluid extract of wafer ash.....	fl.oz. 2
Glycerin.....	fl.oz. 8
Water, enough to make.....	fl.oz. 16

Pel's Antikrinin.

Strontium sulphide.....	av.oz. 8
Zinc oxide.....	av.oz. 1
Starch.....	av.oz. 1
Menthol.....	gr. 20

This is employed as a depilatory.—W. D.

Peterman's Roach Food.

According to Dr. Eccles, the following is similar:

Borax.....	av.oz. 37
Starch.....	av.oz. 9
Cacao.....	av.oz. 4

Petit's Eye Salve.

A similar preparation is the following:

Morphine sulphate.....	gr. 1½
Benzoic acid.....	gr. 4
Ammoniated mercury.....	gr. 48
Zinc oxide.....	gr. 64
White wax.....	gr. 64
Spermaceti.....	gr. 192
Olive oil.....	gr. 500
Oil of rosemary.....	drop 1

Phenol Sodique.

The following is said to yield a similar preparation (G.M. Beringer):

Coal tar.....	av.oz. 2¼
Soda, caustic.....	gr. 120
Water, enough to make.....	fl.oz. 16

Dissolve the soda in 4 fluidounces of warm water, add the coal tar and thoroughly agitate for a few minutes. Then add the remainder of the water and set aside in a covered vessel in a warm place, frequently agitating, for 7 days. Decant and filter.

Phenosalyl.

Carbolic acid.....	parts 90
Lactic acid.....	parts 20
Salicylic acid.....	parts 10
Menthol.....	part 1

Mix by fusing acid and adding other ingredients.

Phillip's Phospho-Muriate of Quinine, Compound.

According to the manufacturers' statement, each fluidram contains 1¼ grains of potassa, 1 grain of magnesia, ¼ grain of lime, ½ grain of iron, all in the form of phosphates. Further: ¼ grain of quinine hydrochlorate, 1½ grain of strychnine, 2 grains of free phosphoric acid. The following formula yields a preparation essentially conforming to these requirements:

Compound solution of phosphoric acid.....	fl.oz. 8
Sugar.....	av.oz. 10
Quinine hydrochlorate.....	gr. 8
Strychnine sulphate.....	gr. 1
Spirit of bitter almond.....	drops 5
Caramel.....	sufficient to color

Dissolve the sugar in the acid solution, add the alkaloid salts previously dissolved in a small amount of distilled water, then the spirit and caramel, and filter.

Phospho-Albumen.

Testicles, sheep, sliced.....	part 1
Water.....	parts 8

Macerate for 12 hours, strain, saturate liquid with sugar and add simple syrup to make 10 parts. Flavor each 12 fluidounces with 4 fluidrams of spirit of orange. To preserve, a small amount of antiseptic is added.—Stuart.

Phytoline.

Is the inspissated juice of poke berries after having been touched by frost. Claimed to be prepared by a special process suggested by Dr. W. W. Baxter.

Pierce's Compound Extract of Smartweed.

The following makes a preparation of smartweed suitable for external application:

Smartweed.....	av.oz. 5
Alcohol.....	fl.oz. 24
Water.....	fl.oz. 8
Camphor.....	gr. 90
Oil of hemlock.....	fl.dr. 2
Oil of sassafras.....	fl.dr. 2

Extract the smartweed with the alcohol and water and to the liquid obtained add the camphor and oils.

Pierce's Favorite Prescription.**Pierce's Golden Medical Discovery.**

The formulas quoted from Hager in the previous editions of this work—alcohol and opium appearing in the formulas for both remedies—have been met by an affidavit by Dr. Pierce, received by the editors, declaring that "there is not at the present time, nor has there ever been, any alcohol, opium, chloral, cocaine, or other narcotic, used as ingredients in Dr. Pierce's Golden Medical Discovery or Dr. Pierce's Favorite Prescription." It is evident from this declaration either that Dr. Hager erred in his analyses, or that his results were obtained from imperfect samples of the remedies.

The "Favorite Prescription" was said by Hager to consist of savin, acacia, cinchona, agaric, sugar, cinnamon, tinc. digitalis, tinc. opium, oil anise, alcohol, water. The "Medical Discovery" was said to consist of lactucarium, honey, tinc. opium, alcohol and water.

Pinapin.

This is essentially a fermented pineapple juice.—Coblentz.

Pinaud's Brilliantine.

The following is said to resemble the original (W. D.):

Castor oil.....	fl.oz. 1
Sweet almond oil.....	fl.oz. 7
Glycerin.....	fl.dr. 8
Jockey club extract.....	fl.dr. 6
Alcohol, enough to make.....	fl.oz. 16

Pinaud's Eau de Quinine Tonique.

In a suit in the U. S. Circuit court at Boston concerning its tariff classification, the court was satisfied "that this article contains of absolute alcohol substantially 67 per cent by volume, that the solid residuum, amounting to about 18-100 of 1 per cent, consists principally of an odoriferous resin having a fragrance similar to that of benzoin; a minute trace of quinine sulphate, and also a very small percentage of essential oils, the remainder being water." This substantiates essentially an analysis published some years ago by A. Tscheppé. The following is for a somewhat similar preparation:

Alcohol.....	fl.oz. 10
Water.....	fl.oz. 5½
Yellow cinchona.....	dr. 4
Cochineal.....	gr. 80
Potassium carbonate.....	gr. 80
Tincture of benzoin.....	fl.dr. 2
Oil bergamot.....	drops 80
Oil sweet orange.....	drops 80
Oil rose geranium.....	drops 10

Make a decoction of the cinchona and cochineal, strain, then add the potash and alcohol in which have been dissolved the resin and oils. Filter through pumice.

Pinkham's (Lydia) Vegetable Compound.

This formula was contributed to D. C., and was said to furnish a product resembling the original:

Cramp bark.....	av.oz. 4
Partridge berry.....	av.oz. 4
Peplar bark.....	av.oz. 2
Unicorn root.....	av.oz. 2
Cassia.....	av.oz. 2
Beth root.....	av.oz. 1½
Sugar.....	av.oz. 24
Alcohol.....	fl.oz. 16
Water.....	sufficient

Reduce the first six ingredients to powder, add boiling water enough to cover, let stand till cold, and then percolate with water until 5 pints of liquid are obtained. To this add the sugar, bring to a boil, remove from the fire, strain, and, when cold, add the alcohol.

Pleis' Fit Powders.

Potassium bromide.....	gr. 15
Gentian, powder.....	gr. 5
Make one powder.—Drug Mill.	

Piso's Consumption Cure.

The following is said to be similar:

Tincture of tolu.....	fl.dr.	4
Fluid extract of lobelia.....	fl.dr.	2
Fluid extract of cannabis indica.....	fl.dr.	2
Sulphate of morphine.....	gr.	4
Tartar emetic.....	gr.	4
Chloroform.....	fl.dr.	1
Essence of spearmint.....	drops	10
Water, hot.....	fl.oz.	8
Sugar.....	av.oz.	14

The fluid extracts, tincture of tolu, chloroform, and essence of spearmint are mixed with sugar, in a bottle. Dissolve the morphine and tartar emetic in the hot water and mix; when thoroughly dissolved, filter.—N. I.

Plant's Asthma Cigarettes.

Stramonium leaves.....	av.oz.	2
Green tea leaves.....	av.oz.	2
Lobelia leaves.....	av.oz.	1½

Mix, moisten with a saturated solution of potassium nitrate, and dry.—Ph. Post.

Platt's Chlorides.

A similar preparation, according to Dr. Tscheppe, is the following:

Aluminum sulphate.....	av.oz.	6
Zinc chloride.....	av.oz.	1½
Sodium chloride.....	av.oz.	2
Calcium chloride.....	av.oz.	3
Water, enough to make.....	fl.oz.	32

Dissolve the calcium and aluminum salts separately, mix, allow the calcium sulphate to subside, and in the clear liquid dissolve the other ingredients.

Ponca Compound.

Each tablet is said to contain 8 gr. extract of ponca (?), 1 gr. extract of mitchella, ¼ gr. of caulophyllin, ½ gr. of helonin, and ½ gr. of viburnin.

Potsdam Balsam.

Oleobalsamic mixture.....	fl.oz.	17
Compound spirit of angelica.....	fl.oz.	2
Tincture of capsicum.....	fl.dr.	3
Spirit of ammonia.....	fl.dr.	4

—D.

Powell's Balm of Anise Seed.

This has a composition similar to paregoric. It has but little camphor, a small amount of rhubarb, and some extract of ipecrice.—N. I.

Pozzoni's Complexion Powder.

Talcum.....	parts	35
Calcium carbonate.....	parts	20
Bismuth oxychloride.....	parts	8
—Snow.		

P. P. P.

This is said to contain the fluid extracts of green poke-root, green prickly-ash bark, stillingia, and sarsaparilla, with compound tincture of gentian, potassium iodide, and simple syrup.

Pyretine.

Acetanilid.....	parts	9
Caffeine.....	part	1
Calcium carbonate.....	parts	2
Sodium bicarbonate.....	parts	8
—Walter.		

Pyrozone.

This is a solution of hydrogen peroxide.

Quickine.

Carbolic acid.....	part	1
Mercuric chloride.....	part	1
Alcohol and water.....	parts	1000
—Ph. Ztg.		

Quinquina.

This is a similar preparation, according to a communication by Dr. Lee to the Phila. Med. and Surg. Reporter:

Quinine alkaloid.....	15 per cent
Quinidine alkaloid.....	15 per cent
Cinchonidine alkaloid.....	15 per cent
Cinchonine alkaloid.....	25 per cent
Chinoidine.....	30 per cent

Quina-Laroche.

This is said (Bulletin Societe Royale de Bruxelles) to be prepared as follows:

Red cinchona, coarse powder.....	av.oz.	1
Water, boiling.....	fl.oz.	1
Malaga wine.....	fl.oz.	10
Diluted alcohol.....	fl.oz.	5
Water.....	sufficient	
Sugar.....	av.oz.	8

Macerate the drug with the boiling water for 30 minutes, decant the liquid, add the wine, macerate for 8 or 10 hours, again decant the liquid, macerate the dregs with the diluted alcohol, macerate for a few hours, again decant, mix the three liquids, and wash the marc with enough water to make the

entire liquid measure 16 fluidounces. Set this aside for 24 hours, filter, and in the filtrate dissolve the sugar.

The ferruginous preparation is made by adding to the above 8 grains of soluble iron pyrophosphate.

R. & H. Thres Chlorides. (Elixir Ferri, Hydrarg et Arsenicum.)

Each fluidram, according to advertisements, contains $\frac{1}{8}$ grain of protochloride of iron, $\frac{1}{16}$ grain of bichloride of mercury, $\frac{1}{16}$ grain of chloride of arsenic, with calisaya alkaloids and aromatics. The Elixir of Chlorides of Arsenic, Iron and Mercury, Part I, is a similar product.

Radcliff's Great Seven Seals or Golden Wonder Remedy.

The following is supposed by Nat. Drug. to be similar to the original:

Ether	fl.dr. 6
Chloroform	fl.dr. 4
Camphorated oil	fl.dr. 4
Oil of peppermint	fl.dr. 2
Tincture of capsicum	fl.oz. 5
Alcohol	fl.oz. 8

Radway's Pills.

Gamboge	gr. 8
Aloes	gr. 80
Jalap	gr. 15
Ginger	gr. 10

Make 80 pills.—Hager.

Radway's Ready Relief.

Soap liniment	fl.oz. 8
Tincture of capsicum	fl.oz. 1
Ammonia water	fl.oz. 1
Alcohol	fl.oz. 1

—J. J. Pierson.

Radway's Renovating Resolvent.

A similar preparation consists of a vinous tincture of ginger and cardamom, sweetened with sugar.

Ransom's Hive Syrup and Tolu.

A similar preparation is composed of about the following (N. I.):

Fluid extract of squill	fl.dr. 2
Fluid extract of senega	fl.dr. 2
Soluble tincture of tolu	fl.dr. 2
Tartar emetic	gr. 4
Sugar	av.oz. 4
Water, enough to make	fl.oz. 4

Recamier Preparations.

See Ayer's Recamier Preparations.

Resorbin.

An ointment vehicle prepared by emulsifying sweet almond oil with yellow wax, gelatin, and soap.—Coblentz.

Redlinger's Pills.

Calomel	gr. 80
Resin of jalap	gr. 60
Soap	gr. 80
Gentian, powder	gr. 80
Fennel, powder	gr. 15
Mucilage of acacia	sufficient for mass

Divide into pills weighing $2\frac{1}{2}$ grains.—D.

Ricord's Urethral Bougies.

Zinc sulphate	gr. 1
Lead acetate	gr. 2
Morphine sulphate	gr. 2
Extract of belladonna	gr. 2
Extract of eucalyptus	gr. 48
Iodole	gr. 24
Cacao butter	gr. 576

Make into 48 suppositories.

Richter's Pain Killer.

Dr. Gerhard states that the following will yield a similar preparation:

Tincture of capsicum, concentrated	fl.oz. $7\frac{1}{2}$
Soap	gr. 120
Water	fl.dr. 10
Water of ammonia	fl.oz. $8\frac{1}{4}$
Camphor	gr. 180
Oil of rosemary	fl.dr. 1
Oil of lavender	fl.dr. 1
Oil of thyme	fl.dr. 1
Oil of clove	fl.dr. 1
Oil of cinnamon	drops 10
Caramel	sufficient to color

Dissolve the soap in the water, add the solution to the tincture of capsicum, and finally add the other ingredients. Mix thoroughly and filter.

The tincture is made from $2\frac{1}{2}$ av. ounces of powdered drug extracted with alcohol.

Robinson's Elixir of Paraldehyde.

This, according to the manufacturers' statements, contains 45 grains of paraldehyde in each fluidounce, dissolved in an aromatic menstruum. The Elixir of Paraldehyde, Part I, furnishes a satisfactory preparation.

Roseter's Hair Regenerator.

Lead acetate.....	gr. 18
Lac sulphur.....	gr. 24
Glycerin.....	fl.dr. 10
Rose water.....	fl.oz. 8½

—Ph. Rec.

Rotterin

Zinc chloride.....	gr. 10
Zinc sulphocarbonate.....	gr. 10
Salicylic acid.....	gr. 2½
Boric acid.....	gr. 8
Citric acid.....	gr. ½
Thymol.....	gr. 1
Sodium chloride.....	gr. 1
Distilled water.....	fl.oz. 16

The tablets contain one-half the quantities of the solids mentioned above.

Rourke's Iodine Liniment.

See Giles' Iodide of Ammonia Liniment—D. C.

Royal Catarrh Cure.

This, according to N. I., contains about the following:

Common salt.....	parts 98
Carbolic acid.....	parts 1.85
Berberine hydrochlorate.....	part 0.65

Royal Germeteur.

H. R. Slack says the following has the same chemical and physiological properties:

Sulphuric acid.....	fl.oz. 2
Water saturated with sulphur- etted hydrogen.....	fl.oz. 1
Common water, enough to make..	gal. 1

Rubifoam.

A similar preparation is given by the following:

White castile soap.....	gr. 270
Glycerin.....	fl.dr. 4½
Simple syrup.....	fl.oz. 2
Water.....	fl.oz. 18
Alcohol.....	fl.oz. 13
Tincture of cardamom.....	fl.dr. 2
Tincture of Canada snake root (1 in 16).....	fl.dr. 2
Oil of peppermint.....	m. 25
Oil of wintergreen.....	m. 25
Oil of clove.....	drops 6
Oil of cassia.....	drops 6
Solution of carmine.....	sufficient to color

Mix the soap, glycerin, syrup and water, stir well, add the alcohol, then the remainder of the ingredients, let stand a few days, and filter at a low temperature (to avoid separation of any soap).

Ruppert's Face Bleach.

W. Robertson states that the following makes a similar preparation:

Corrosive sublimate.....	gr. 8
Tincture of benzoin.....	fl.dr. 1
Water, enough to make.....	fl.oz. 8

Sage's Catarrh Remedy.

Powdered golden seal.....	gr. 40
Indigo.....	gr. 4
Camphor.....	gr. 16
Carbolic acid.....	m. 20
Sodium chloride.....	gr. 400

Triturate the camphor to powder by aid of a small quantity of alcohol, and mix with it the salt previously reduced to fine powder; rub the indigo and acid together, mix this with the salt and camphor, finally add the golden seal, and mix intimately in a mortar without much pressure,—Pharm.

Salicylbromanilid.

See Antinervin.

Salubrin.

Acetic acid, glacial.....	parts 2
Acetic ether.....	parts 25
Alcohol.....	parts 50
Water.....	parts 23

Sanitas.

A similar product may be prepared by passing air through warm oil of turpentine, which is in contact with water.—Frerksen.

Sanmetto.

This is claimed to be a combination of true santal and saw palmetto in a pleasant aromatic vehicle. The following may yield a preparation similar in therapeutic properties:

Yellow sandalwood.....	av.oz. 1
Saw palmetto.....	av.oz. 1
Simple elixir.....	sufficient

Mix the drugs with 16 fluidounces of the elixir, macerate for several days, agitating occasionally, and filter.

Saul's Catarrh Remedy.

This is said to be composed of the following (A. D.):

Compound tincture of benzoin.....	fl.oz. 2
Tincture of tolu.....	fl.oz. 2
Chloroform.....	fl.dr. 1
Sulphuric ether.....	fl.dr. 1
Aromatic spirit of ammonia.....	fl.oz. 1
Oil of tar.....	fl.dr. 1
Alcohol.....	fl.oz. 5

Saunders' Bloom of Ninon.

Precipitated chalk.....	parts 7
Talcum	parts 7
Bismuth subcarbonate.....	parts 2
Zinc oxide.....	parts 5
Starch.....	parts 9

—H. W. Snow.

Saw Palmetto Compound.

Fluid extract of saw palmetto..	f.oz. 2
Fluid extract of corn silk.....	f.oz. 2
Fluid extract of sandalwood.....	f.oz. 2
Simple elixir.....	f.oz. 10

Schenck's Pulmonic Syrup.

H. M. Wilder has claimed this to be substantially its composition:

Wormwood	av.oz. 1
Catnip	av.oz. 1
Tansy.....	av.oz. 1
Hyssop.....	av.oz. 1
Hoarhound	av.oz. 1
Hops.....	av.oz. 1
Chamomile.....	av.oz. 1
Comfrey.....	av.oz. 1
Senega.....	av.oz. 1
Elecampane.....	av.oz. 1

Boil with sufficient water to make, after straining, 2 quarts, then add:

Gum arabic	av.oz. 3
Licorice	av.oz. 3
One good-sized turnip and finally:	
Sugar	lbs. 6
Brandy.....	f.oz. 16
Juice of 4 lemons.	

Schlotterbeck's Compound Hydrastis Mixture.

According to statement of composition by the manufacturers, the following furnishes a similar compound:

Rhubarb	gr. 320
Golden seal.....	gr. 160
Cinnamon.....	gr. 160
Potassium carbonate.....	gr. 320
Pancreatin.....	gr. 64
Pepsin.....	gr. 64
Syrup	f.oz. 2
Water	f.oz. 2
Simple elixir.....	f.oz. 6
Diluted alcohol.....	sufficient

Mix the rhubarb, golden seal and cinnamon, reduce to powder and percolate with diluted alcohol so as to obtain 6 fluidounces of percolate. To this add the potassium carbonate and pancreatin, agitate occasionally for 24 hours, mix with the pepsin previously dissolved in the water, filter, and lastly add the syrup and elixir.

Schreyer's Toothache Pellets.

Oil of cloves.....	gr. 15
Oil of cassia.....	gr. 15
Black pepper.....	gr. 60
Sodium chloride.....	gr. 60
Acacia.....	gr. 60

Make into pellets weighing 8 grains each.

—Wittstein.

Searle's Athlophorus.

Morphine sulphate.....	gr. 2
Fluid extract of colchicum seed..	f.dr. 1
Fluid extract of guaiac.....	f.dr. 1
Potassium acetate.....	gr. 60
Potassium salicylate.....	gr. 60
Diluted alcohol.....	f.dr. 4
Syrup of squill, enough to make..	f.oz. 6

Make a solution by applying gentle heat.—

N. I.

II.

Potassium acetate.....	gr. 60
Sodium salicylate.....	gr. 490
Sugar	av.oz. 4
Water.....	f.dr. 14
Caramel.....	sufficient to color

—N. I.

Scott's Emulsion of Cod Liver Oil.

This is said to contain fifty per cent of cod liver oil, and 6 grains of calcium hypophosphate and 3 grains of sodium hypophosphate to the fluidounce.

"Schinseng" (or Ginseng) Elixir.

A proprietary ginseng elixir is described as containing the "active proximate principle of the panax schinseng [Chinese ginseng] in an aromatic essence." A satisfactory Ginseng Elixir may be made as follows:

Fluid extract of ginseng.....	f.oz. 2
Simple elixir.....	f.oz. 14

Seven Sutherland Sisters Hair Grower.

This is said to make a similar preparation (N. I.):

Bay rum.....	f.oz. 7
Distilled extract of witch hazel..	f.oz. 9
Common salt.....	gr. 60
Diluted hydrochloric acid.....	drop 1
Magnesia.....	sufficient

Mix the bay rum and witch hazel with some of the magnesia, filter, in the filtrate dissolve the salt, add the acid and filter again if necessary.

Sheffield's Dentifrice.

White castile soap, powder....av.oz. 1
Precipitated chalk.....av.oz. 20
Carmine.....gr. 4 or 5
Sassafras flavoring (as below)...fl.dr. 2
Glycerinsufficient

Rub the solids well together, add the flavoring in small portions during constant trituration and then glycerin enough to form a thin paste.

(Sassafras Flavoring.)

Oil of sassafras.....dr. 5 1/4
Oil of cinnamon.....dr. 2
Oil of wintergreen.....dr. 1/4
Extract of vanilla.....dr. 4
Alcohol.....dr. 4

Shake before using.—D. C.

Shiloh's Consumption Cure.

This formula for a similar preparation was contributed to the D. C.:

Chloroform.....fl.dr. 2
Alcohol.....fl.oz. 1
Oil of peppermint.....drops 10
Oil of tar.....fl.dr. 1
Morphine hydrochlorate.....gr. 4
Diluted hydrocyanic acid.....fl.dr. 1
Extract of licorice.....gr. 120
Tincture of lobelia.....fl.dr. 4
Water.....fl.oz. 1
Simple syrup, enough to make fl.oz. 16

Sloan's Condition Powder.

Elecampane root, fenugreek,
flaxseed, juniper berries, pop-
lar bark, resin, mustard,
bran, each.....parts 8
Licorice root, ginger, sodium
sulphate, sodium chloride, sul-
phur, iron sulphate, each.....parts 6
Gentian, sodium carbonate,
each.....parts 4
Black sulphuret of antimony,
potassium nitrate, coriander,
valerian, each.....parts 2
Sanguinaria, lobelia, podophyl-
lum, dried alum, each.....part 1

Mrs. Smith's Butter Color.

The following is said to resemble the original (N. I.):

Annatto seed, bruised.....av.oz. 3
Turmeric.....gr. 120
Ammonium carbonate.....gr. 40
Cottonseed oil.....fl.oz. 7
Lard oil.....fl.oz. 1

Boil, stirring frequently, until the proper rich color has been attained; then strain and

allow to settle. Only the best material should be used.

Simmons' Liver Regulator.

The powder consists of:

Liverwort.....av.oz. 2
Leptandra.....av.oz. 2
Serpentaria.....av.oz. 2
Senna.....av.oz. 3

The liquid preparation consists of the above extracted with diluted alcohol.

Smith's Electric Oil.

Linseed oil.....fl.oz. 4
Olive oil.....fl.oz. 8
Sassafras oil.....fl.oz. 1
Chloroform.....fl.dr. 4

—Kilner.

Smith's Tonic Syrup.

Quinine sulphate.....gr. 80
Cinchonine sulphate.....gr. 80
Fluid extract of podophyllum...fl.dr. 2
Compound tincture of cardamom fl.dr. 1/4
Soluble citrate of iron.....gr. 64
Sugar.....av.oz. 10
Water.....fl.oz. 6
Simple syrup, enough to make..fl.oz. 16

A few drops of aromatic sulphuric acid may be added, if necessary, to dissolve the alkaloid salts.—N. I.

Somnal.

This is said by the Ph. Rundsch. to be an alcoholic solution of chloral hydrate and urethan.

Solution of Chloro-Phosphide of Arsenic.

Arsenous acid.....gr. 15
Diluted hydrochloric acid.....fl.oz. 8
Distilled water.....sufficient
Phosphoric acid.....a few drops

Dissolve the arsenous acid in the hydrochloric acid and 7 fluidounces of water by the aid of a gentle heat, add the remainder of the water, and then the phosphoric acid.—Fr. Sieker.

Steedman's Soothing Powders.

Opium powder.....gr. 8
Ipecac.....gr. 1
Milk sugar.....gr. 8
Rice flour.....gr. 12

Mix and divide into 8 powders.—N. I.

Steresol.

A similar preparation is said to be the following:

Shellac.....	gr. 540
Benzoin.....	gr. 75
Tolu.....	gr. 75
Carbolic acid.....	fl.oz. 1½
Oil of cinnamon.....	fl.dr. 1
Saccharin.....	gr. 45
Alcohol, enough to make.....	fl.oz. 16

St. Jacob's Oil.

Squibb states this contains water, ether, alcohol, turpentine, aconite, and red coloring matter.

• The following formula, constructed in conformity with the best information available, may furnish a satisfactory preparation:

Camphor.....	oz. 1
Tincture of aconite root.....	fl.oz. 2
Ether.....	fl.oz. 1
Oil of cedar.....	fl.oz. 4
Alcohol enough to make.....	fl.oz. 16
Tincture of alkanet.....	enough to color

Stoddart's Peerless Liquid.

Bismuth oxychloride.....	gr. 120
Precipitated chalk.....	gr. 240
Glycerin.....	fl.dr. 1
Water.....	fl.oz. 2½

Color and perfume.

Stoughton's Bitters.

Gentian.....	av.oz. 1
Orange peel.....	av.oz. 1
Columbo.....	av.oz. 1
Chamomile.....	av.oz. 1
Quassia.....	av.oz. 1
Caramel.....	av.oz. 4
Diluted alcohol.....	fl.oz. 80

Extract the coarsely powdered drugs by maceration with the diluted alcohol for one week, agitating occasionally, then filter, and add the caramel.

Compound tincture of gentian is also similar.

Strong's Arnica Jelly.

See No. VI in Cosmetic Jellies, Part III, for a similar compound.

Succus Alterans.

See Mc Dade's Succus Alterans.

Svapnia.

The following is said to make a similar product (D. S. Dyson):

Deodorized tincture of opium...fl.oz.	16
Powdered gum arabic.....gr.	120

Evaporate the tincture to 4 fluidounces, remove the vessel from the fire, add the gum and triturate thoroughly, replace the vessel on the fire, and continue evaporation until the liquid is of such a density that it will have a syrupy consistence when cold. Now spread the liquid, while still warm, in thin layers on glass or porcelain plates and set aside to dry.

Swan Down.

Orris root.....	parts 6
Zinc oxide.....	parts 13
Talcum.....	parts 14
—Snow.	

Swayne's Ointment.

Precipitated sulphur.....	av.oz. 2
Suet.....	av.oz. 8
Lard.....	av.oz. 8
—N. I.	

Syrup of Figs.

I.	
Senna, washed with alcohol.....	av.oz. 4
Cloves.....	gr. 120
Cinnamon.....	gr. 60
Nutmeg.....	gr. 60
Sugar.....	av.oz. 8
Water,	
Alcohol.....	of each, sufficient

Percolate the senna and spices with a menstruum composed of 1 volume of alcohol and 3 of water, until 8 fluidounces of percolate are obtained, and in the latter dissolve the sugar.

The senna is "washed" by macerating 4 ounces of the leaves in 16 ounces of alcohol for 2 days; after which they are separated from the liquid, dried and powdered.

II.	
Senna.....	av.oz. 14
Coriander.....	av.oz. 6
Figs.....	av.oz. 24
Tamarinds.....	av.oz. 18
Cassia pulp.....	av.oz. 18
Prunes.....	av.oz. 12
Extract of licorice.....	av.oz. 1½
Spirit of peppermint.....	av.oz. 1½
Simple syrup.....	gal. 1

Make an aqueous extract of the solid ingredients in which the required portion of sugar should be dissolved.

Sweet Quinine.

A mixture of cinchonine alkaloid with some ammoniated glycyrrhizin—Procter.

Syrup of Trifolium Compound. (Compound Syrup of Red Clover Blossoms.)

Fluid extract of red clover blossoms	.....fl.oz.	1
Fluid extract of burdock	.....fl.dr.	4
Fluid extract of berberis aquifolium	.....fl.dr.	4
Fluid extract of stillingia	.....fl.dr.	4
Fluid extract of poke root	.....fl.dr.	4
Fluid extract of cascara amarga	.....fl.dr.	4
Fluid extract of prickly-ash bark	.....fl.dr.	1
Potassium iodide	.....gr.	128
Water	.....fl.oz.	5
Sugar	.....av.oz.	18

Mix the fluid extracts and the water, let stand for a few hours, filter, and in the filtrate dissolve the sugar and potassium iodide, and strain.

Tamar Indien.

According to the Repert de Pharmacie, the ingredients are as follows:

Purified tamarind pulp	.....av.oz.	1¼
Sugar, powder	.....av.oz.	1
Milk sugar, powder	.....av.oz.	1½
Senna, powder	.....av.oz.	1¼
Anise, powder	.....av.oz.	¼
Tartaric acid	.....gr.	85
Essence of lemon	.....fl.dr.	½
Glycerin	.....sufficient	

Mix and make into troches.

Tarrant's Compound Extract of Cubebs and Copaiba.

Nelson's "Handbook" gives the following formula for a compound paste of cubebs and copaiba:

Balsam copaiba	.....av.oz.	16
Calcined magnesia	.....av.oz.	1
Powdered potassium nitrate	.....av.oz.	8
Powdered cubebs	.....av.oz.	48
Oil of wintergreen	.....fl.dr.	4
Honey	.....sufficient	

Rub the copaiba and magnesia well together; then add the cubebs and potassium nitrate, using enough honey to form a paste. Lastly add the wintergreen oil.

Thymenthol.

Lister's Antiseptic Solution, Part I, has the same essential constituents claimed for this.

Tarrant's Seltzer Aperient.

The following gives (N. I.) a similar preparation.

Sodium bicarbonate	.....parts	17
Tartaric acid	.....parts	15
Rochelle salt	.....parts	11

Thomas' Electric Oil.

This formula for a similar product has been given by L. L. Briggs:

Camphor	.....gr.	240
Oil of wintergreen	.....fl.dr.	4
Oil of origanum	.....fl.dr.	4
Chloroform	.....fl.oz.	1
Tincture of opium	.....fl.oz.	1
Oil of sassafras	.....fl.oz.	1
Oil of hemlock	.....fl.oz.	1
Oil of turpentine	.....fl.oz.	1
Balsam of fir	.....av.oz.	1
Tincture of guaiacum	.....fl.oz.	1
Tincture of catechu	.....fl.oz.	1
Alcohol	.....fl.oz.	64
Alkanet	.....sufficient to color	

Thompson's Eye Water.

Copper sulphate	.....gr.	5
Zinc sulphate	.....gr.	20
Rose water	.....fl.oz.	16
Spirit of camphor	.....fl.dr.	2
Tincture of saffron	.....fl.dr.	2

—Kilner's Form.

Thymolyptol.

According to statements of composition by the manufacturers, Lister's Antiseptic Solution, Part I, has about the same essential constituents.

Tilden's Elixir of Iodo-Bromide of Calcium Compound.

Compound Elixir of Iodo-Bromide of Calcium, Part I, contains calcium bromide, several iodides, etc.

Tobias' Derby Condition Powder.

Tartar emetic	.....av.oz.	1
Black antimony	.....av.oz.	10
Sulphur	.....av.oz.	5
Potassium nitrate	.....av.oz.	5
Fenugreek	.....av.oz.	20
uniper berries	.....av.oz.	10

—Hager.

Tolu, Rock and Rye.

Whiskey	.....gal.	1
Rock candy syrup	.....fl.oz.	64
Tincture of tolu	.....fl.oz.	2

Mix, allow to stand for several days, and filter.

Tonic Aphrodisiac Tablets. (Wayne.)

The following formula contains essentially the same ingredients claimed for the original:

Extract of damiana.....	gr. 100
Extract of saw palmetto.....	gr. 100
Extract of coca.....	gr. 100
Extract of nux vomica.....	gr. 10
Phosphorus.....	gr. ½

Make into 100 pills.

Tongaline.

According to the statement of composition made by the manufacturers, the following contains the essential ingredients in the required proportion for a similar preparation:

Fluid extract of tongs.....	fl.oz. 8
Fluid extract of black cohosh.....	fl.dr. 4
Sodium salicylate.....	av.oz. 2½
Pilocarpine salicylate.....	gr. 1¼
Colchicine salicylate.....	gr. ¼
Simple elixir, enough to make.....	fl.oz. 16

For all practical purposes the two alkaloids could be replaced by 4 fluidrams of fluid extract of jaborandi and 2½ fluidounces of fluid extract of colchicum seed.

Trousseau's Diuretic Wine.

The following furnishes a satisfactory preparation:

Squill.....	av.oz. 1
Digitalis.....	av.oz. 2
Juniper berries.....	av.oz. 12
Potassium acetate.....	av.oz. 8
Alcohol.....	fl.oz. 16
White wine.....	gal. 1

Tyree's Antiseptic Powder.

Formula as published by the manufacturer, in parts: Sodium borate, 50; alum, 50; carbolic acid, 5; glycerin, 5; the crystallized principles of thyme, 5; eucalyptus, 5; gaultheria, 5; mentha, 5. The following will probably represent these conditions:

Borax.....	gr. 200
Alum.....	gr. 200
Carbolic acid, crystallized.....	gr. 20
Thymol.....	gr. 20
Menthol.....	gr. 20
Oil of eucalyptus.....	m. 20
Oil of gaultheria.....	m. 20

Ulyptol.

See Eulyptol.

Tropic Fruit Laxative.

According to A. Conrath, the following makes a satisfactory product:

Jalap, powder.....	av.oz. 1
Senna, powder.....	av.oz. 1
Sugar, powder.....	av.oz. 1
Tamarind pulp.....	av.oz. 6

Make into lozenges weighing 45 gr., coat with chocolate and sugar and wrap in tinfoil.

Uncle Sam's Nerve and Bone Liniment.

Oil of origanum.....	fl.oz. 1
Oil of rosemary.....	fl.oz. 1
Oil of amber.....	fl.oz. 1
Oil of hemlock.....	fl.oz. 1
Oil of turpentine.....	fl.oz. 16
Linseed oil.....	fl.oz. 24

Upham's Asthma Remedy.

Stramonium leaves.....	av.oz. 8
Skunk cabbage.....	av.oz. 8
Lobelia herb.....	av.oz. 6
Potassium nitrate.....	av.oz. 4
Water.....	fl.oz. 16

Mix the three drugs, reduce to powder, add the potassium salt previously dissolved in the water, and dry the whole.—Kilner.

Uricedin.

Sodium chloride.....	parts 4
Lithium citrate.....	parts 5
Sodium citrate.....	parts 16
Sodium sulphate.....	parts 68

Van Buskirk's Sozodont.

The following resembles the original (N. I.):

I. Liquid:

Alcohol.....	fl.oz. 1
Water.....	fl.oz. 1¼
Soap.....	gr. 120
Oil of wintergreen.....	drops 2
Fluid extract of red sanders.....	sufficient

Dissolve the soap in the mixture of alcohol and water, add the color, perfume with oil of wintergreen, add enough water to make the fluid measure 8 fluidounces.

II. Powder:

Infusorial earth (tripoli).....	gr. 40
Orris root.....	gr. 125
Precipitated chalk.....	gr. 205

Perfume very lightly with oil of cloves.

Van Stan's Stratena.

A good cement of similar nature is the following:

Acetic acid.....	fl.oz.	4
White glue.....	av.oz.	8
French gelatin.....	gr.	240
Shellac varnish.....	fl.dr.	4
Distilled water.....	fl.oz.	4

Dissolve the glue in the acetic acid with heat, and the gelatin in the water with heat. Mix the two solutions gradually and work until a uniform mixture results; then add the shellac varnish. Mix thoroughly and bottle.

Viburnal.

According to the statement of composition by the manufacturers the following contains the essential ingredients of a similar preparation:

Fluid extract of black haw.....	fl.oz.	2½
Fluid extract of black cohosh.....	fl.oz.	2½
Compound fluid extract of helonias.....	fl.oz.	5
Simple elixir.....	fl.oz.	6

Vin Mariani.

See Mariani Wine of Coca.

Vita Nuova.

See Ayer's Vita Nuova.

Walker's Vinegar Bitters.

A decoction of aloes, gualac, sarsaparilla, cinchona, sassafras and golden seal preserved with acetic acid.—Cooley's Cyclopaedia.

Warner's Asparoline Compound.

Each fluidounce, according to the manufacturers, contains: Diluted alcohol; guaiacum, 30 grains; asparagus seed, 30 grains; parsley seed, 30 grains; black-haw (bark of root), 60 grains; henbane leaves, 6 grains. The following formula is based upon the foregoing:

Guaiac.....	oz.	1
Asparagus seed.....	oz.	1
Parsley seed.....	oz.	1
Black-haw.....	oz.	2
Henbane.....	gr.	96
Diluted alcohol.....		enough

Reduce the drugs to powder and percolate with diluted alcohol enough to obtain 16 fluidounces of percolate.

Warner's Tasteless Cod Liver Oil.

A preparation of Cod Liver Oil, combined with extract of malt, fluid extract of wild

cherry, and compound syrup of hypophosphites with iron and manganese. Containing the curative agents from 25 per cent of cod liver oil, and rendered pleasant by aromatics. A preparation with essentially these ingredients and proportions is the following:

Morrhual.....	gr.	64
Fluid extract of wild cherry.....	fl.oz.	2
Fluid extract of licorice.....	fl.oz.	3
Glycerin.....	fl.oz.	1
Simple syrup.....	fl.oz.	1
Fluid extract of malt.....	fl.oz.	6
Compound syrup of hypophosphites, with iron and manganese.....	fl.oz.	8
Fuller's earth, powder.....	gr.	240
Caramel.....		sufficient

Mix the morrhual with the glycerin and triturate with the fuller's earth; add the fluid extracts, syrup and malt, shake well, let stand for a day, agitating occasionally; filter, and to filtrate add the syrup of hypophosphites and sufficient caramel to color.

Warner's Safe Cure.

The following is said to produce a similar preparation:

Potassium nitrate, powder.....	av.oz.	¾
Liverwort.....	av.oz.	1
Water.....		sufficient
Alcohol.....	fl.oz.	2
Glycerin.....	fl.oz.	1½
Spirit of wintergreen.....		drops 40

Infuse the liverwort with 16 fluidounces of hot water for ½ hours, strain and filter. Dissolve the potassium nitrate in the liquid; when cold add the alcohol, glycerin and spirit of wintergreen, and make up the measure to 16 fluidounces with water.

Warner's Safe Pills.

According to the examination of the Dresden (Germany) Health Department, each pill contains 1¼ gr. of aloes.

Wayne's Diuretic Elixir.

"Elixir of Buchu, Juniper, Uva Ursi and Potassium Acetate," Part I, contains the essential ingredients of a similar preparation.

Wei de Meyer's Catarrh Cure.

This consists largely of sodium bicarbonate.—N. I.

Weinmann's Dental Anæsthetic.

This contains about 5¼ per cent of cocaine, hydrochlorate, also alcohol, oil of peppermint and iodine (indicating possibly aristol).

Watt's Anti-Rheumatic Pills.

A similar preparation is made as follows:

Aloes.....	gr. 240
Gamboge.....	gr. 240
Hellebore.....	gr. 120
Calomel.....	gr. 30
Guaiaac.....	gr. 30
Yellow sulphide of antimony.....	gr. 15
Oil of clove.....	fl.dr. $\frac{1}{2}$
Soap.....	gr. 60
Spirit of camphor.....	sufficient

Make into 5-gr. pills.

Weld's Syrup of Chloride of Iron.

The following makes a non-astringent syrup containing iron chloride:

Solution of chloride of iron.....	fl.dr. 4
Glycerin.....	fl.oz. 18
Citric acid.....	gr. 80
Water,	
Ammonia water.....	of each, sufficient

Mix the solution of iron with the glycerin, dissolve the acid in 1 fluidounce of water, mix the two solutions, add ammonia water until the liquid is only feebly acid, and add the remainder of the water.

Whiteley's Nipple Wash.

The following is said to be a good wash:

Borax.....	gr. 40
Tannin.....	gr. 10
Glycerin.....	fl.oz. 1
Rose water.....	fl.oz. 1

Winslow's Soothing Syrup.

The following, contributed to the D. C., is said to furnish a similar preparation:

Morphine sulphate.....	gr. 1
Sodium carbonate.....	gr. 2
Syrup, simple.....	fl.oz. 8
Water.....	fl.oz. 1
Spirit of fennel.....	fl.dr. 2

Wistar's Balsam of Wild Cherry.

Fluid extract of wild cherry.....	fl.oz. 1
Fluid extract of ipecac.....	fl.dr. 2
Fluid extract of squill.....	fl.dr. 2
Tincture of opium.....	fl.dr. 1
Tartar emetic.....	gr. 2
Sugar-house syrup.....	fl.oz. 8
Alcohol.....	fl.dr. 6
Spirit of anise.....	drops 10
Compound tincture of cudbear,	
Water, of each, enough to make	fl.oz. 8

—N. I.

Wither's Antizymotic Solution.

The following contains the same essential ingredients as were found by Bierbach's analysis in the original:

Corrosive sublimate.....	gr. 16
Aluminum chloride.....	gr. 6
Zinc chloride.....	gr. $3\frac{1}{2}$
Potassium chloride.....	gr. 6
Sodium chloride.....	gr. 60
Hydrochloric acid.....	m. 15
Water, enough to make.....	fl.oz. 16

Woolbridge's Treatment of Typhoid Fever.

This method of treatment of typhoid requires the employment of the three formulas:

I. (Tablets.)

Podophyllin.....	gr. $\frac{1}{16}$
Calomel.....	gr. $\frac{1}{16}$
Guaiaicol carbonate.....	gr. $\frac{1}{16}$
Menthol.....	gr. $\frac{1}{16}$
Eucalyptol.....	sufficient

II. (Tablets.)

Podophyllin.....	gr. $\frac{1}{16}$
Calomel.....	gr. $\frac{1}{16}$
Guaiaicol carbonate.....	gr. $\frac{1}{16}$
Menthol.....	gr. $\frac{1}{16}$
Thymol.....	gr. $\frac{1}{16}$
Eucalyptol.....	sufficient

III. (Capsules.)

Guaiaicol carbonate.....	gr. 8
Thymol.....	gr. 1
Menthol.....	gr. $\frac{1}{2}$
Eucalyptol.....	m. 5

IV. (Tablets for children.)

Podophyllin.....	gr. $\frac{1}{16}$
Calomel.....	gr. $\frac{1}{16}$
Guaiaicol carbonate.....	gr. $\frac{1}{16}$
Menthol.....	gr. $\frac{1}{16}$
Eucalyptol.....	sufficient

V. (Capsules for children.)

Guaiaicol carbonate.....	gr. $\frac{1}{2}$
Thymol.....	gr. $\frac{1}{2}$
Menthol.....	gr. $\frac{1}{16}$
Eucalyptol.....	m. 1
Olive oil.....	sufficient

Wright's Face Powder.

Snow gives the following for a similar preparation:

Talcum.....	av.oz. 30
Starch.....	av.oz. 40
Calcium sulphate.....	av.oz. 48
Bismuth oxide.....	av.oz. 1

SUPPLEMENTARY FORMULAS.

The following supplementary formulas are given in response to requests received since the issuance of the first edition:

Acacine.

Said to be a mixture of dried casein, sodium bicarbonate and sugar, containing 10 per cent of the casein.

Antinervin.

- I.
- | | |
|-----------------------|---------|
| Ammonium bromide..... | part 1 |
| Salicylic acid..... | part 1 |
| Acetanilid..... | parts 2 |
- E. Ritsert.

II.

This formula is also given:

- | | |
|------------------------|--------|
| Acetanilid..... | part 1 |
| Sodium salicylate..... | part 1 |

Antipyonin.

Principally a tetraborate or polyborate of sodium.—A. D.

Antirheumatin.

This is said to be chiefly a combination of sodium salicylate and methylene blue.—M. B.

Antiseptin.

- | | |
|--------------------|----------|
| Zinc sulphate..... | parts 34 |
| Boric acid..... | parts 4 |
| Zinc iodide..... | part 1 |
| Thymol..... | part 1 |
- Goldman.

Arabian Balsam.

- | | |
|------------------------|-----------|
| Cottonseed oil.... | f. oz. 15 |
| Origanum oil..... | f. oz. 1 |
| Oil of turpentine..... | f. dr. 4 |
- N. I.

Armenian Pills.

- | | |
|-------------------------------|----------|
| Balsam of copaiba..... | parts 14 |
| Magnesia, calcined light..... | parts 2 |
| Cubebs, powder.... | parts 7 |
| Armenian bole, powder..... | parts 7 |

Heat the copaiba until it acquires the consistence of a plaster, that is, until most of the volatile oil has been dissipated, then mix it with the magnesia and set it aside that the mass may set. Next add the powdered cubebs and Armenian bole, and mix intimately. Make the mass into pills of 8 gr. each and roll them in Armenian bole.—Schacht.

Aseptic or Aseptinic Acid.

Said to be an aqueous solution of 5 parts of boric acid in 1000 parts of hydrogen peroxide (5 per cent), with or without 3 parts of salicylic acid.—Thoms.

Ayer's Becamier Balm.

A "balm" of this type is made as follows:

- | | |
|------------------------|-----------|
| Zinc oxide..... | gr. 500 |
| Glycerin..... | drops 2 |
| Alcohol..... | drops 15 |
| Corrosive sublimate... | gr. 25 |
| Water..... | f. oz. 30 |

Barker's Nerve and Bone Liniment.

- | | |
|--|---------------|
| Camphor..... | av. oz. 1 1/4 |
| Oil of tar..... | f. dr. 4 |
| Oil of thyme..... | f. oz. 1 |
| Oil of turpentine..... | f. oz. 2 |
| Black or Franklin oil, enough to make..... | f. oz. 16 |
- N. I.

Bate's Salve.

- | | |
|------------------|-----------|
| Beeswax..... | av. oz. 2 |
| Amber resin..... | av. oz. 8 |
| Linseed oil..... | f. oz. 10 |
| Red lead..... | av. oz. 4 |
- Boil with constant stirring until the whole is dark brown.—B. & C. Drug.

Battley's Sedative.

- | | |
|-----------------------|-----------|
| Extract of opium..... | gr. 600 |
| Boiling water..... | f. oz. 18 |
| Alcohol..... | f. oz. 8 |

Dissolve the extract in the boiling water, allow to cool, add the alcohol and the cold water and filter.

Bismuthol.

A mixture of bismuth, salicylate and sodium phosphate furnishes an apparently similar product.

Borolyptol.

The following formula has been contributed to W. D. as making a similar preparation:

Glyceride of boroglycerin....	av. oz. 1 1/4
Formaldehyde solution.....	drops 20
Butyric ether.....	drops 8
Distilled water..	f. oz. 16

Butyromel.

- | | |
|-------------------|-----------|
| Fresh butter..... | av. oz. 2 |
| Honey..... | av. oz. 1 |
- Mix until a homogeneous mass is obtained.
- Coblentz.

Byrolin.

This appears to be a mixture of boric acid, glycerin and lanolin.

Calder's Saponaceous Dentifrice.

- | | |
|----------------------------|----------------------|
| Powdered castile soap..... | av. oz. 4 |
| Precipitated chalk..... | av. oz. 2 |
| Magnesium carbonate..... | av. oz. 1 |
| Sugar..... | av. oz. 1 |
| Oil of wintergreen.... | sufficient to flavor |
- N. I.

Dean's Cactus Oil.

The following formula has been contributed to W. D. as making a similar preparation:

Neutral oil.....gal.	1
Oil of mirbane.....fl.oz.	8
Alkanet.....sufficient to color	

Duffy's Malt Whiskey.

Diluted and sweetened alcohol has similar physical properties.

Formacoll.

A combination of formaldehyde with gelatin.

Garfield Tea. This is a good "senna" tea:

Senna.....parts	8
Dog grass.....part	1
Liverwort.....part	1

Glutiform.

A combination of formaldehyde with gelatin.

Glutol.

A combination of formaldehyde with gelatin.

Hall's Catarrh Remedy.

A good catarrh remedy of this type is the following:

Gentian, coarse powder.....av.oz.	1½
Bitter orange peel, coarse powder.gr.	800
Cardamom seeds, coarse powder.gr.	100
Potassium iodide.....av.oz.	1
Diluted alcohol.....sufficient	

Macerate the crude drugs in 12 fluidounces of diluted alcohol for 48 hours, then transfer to a percolator and allow to percolate slowly; when the liquid has ceased to percolate pass enough menstruum through the percolator to make the finished product measure 16 fluidounces. In this dissolve the potassium iodide.

In other words, it is potassium iodide dissolved in compound tincture of gentian of the British pharmacopoeia.

Hamburg Tea.

Senna, cut.....av.oz.	8
Manna.....av.oz.	8
Coriander.....av.oz.	1

Holman's Liver Pad.

May apple root.....oz.	¼
Leptandra root.....oz.	¼
Bayberry bark.....dr.	2
Red cinchona bark.....oz.	2
Fenugreek.....oz.	½
Guaiac resin.....oz.	1½
Oil of eucalyptus.....fl.dr.	2

Grind the solids to powder, mix with them the oil and make into a pad, using cotton cloth of suitable thickness as the envelope.—Kilner's Form.

Kaskine.

This is said to consist largely of sugar.

Kohler's One-Night Corn Salve.

A good salve of this type is the following:

Salicylic acid.....part	1
Simple cerate.....parts	8

Kutnow's Improved Laxative Powder.

This is said to be the name given to an artificial Carlsbad salt.

Listol Tablets.

Boric acid.....gr.	12
Tannic acid.....gr.	12
Salicylic acid.....gr.	6
Extract of belladonna.....gr.	1½
Extract of helonias.....gr.	3
Extract of henbane.....gr.	9
Extract of opium.....gr.	3
Dithymol diiodide.....gr.	86
Alum.....gr.	86
Eucalyptol.....gr.	1½
Hydrastine hydrochlorate.....gr.	12

Make into 12 compressed tablets.

The foregoing corresponds with that of the manufacturers, except that they mention "listol" instead of dithymol diiodide, and colorless extract of hydrastis for hydrastine, and they do not indicate quantities in the three last items.

Lloyd's Hydrastis.

See Colorless Solution of Hydrastis, Part I.

Maizo-Lithium.

Fluid extract of licorice root..fl.oz.	1
Fluid extract of corn silk.....fl.oz.	2
Lithium citrate.....gr.	120
Simple elixir, enough to make..fl.oz.	16

McGill's Orange Blossom.

The following appears to be similar in physical properties:

Zinc sulphate.....gr.	60
Alum.....gr.	15
Extract of hyoscyamus.....gr.	1
White wax.....gr.	30
Cacao butter.....gr.	180

Make into suppositories of 32 gr. each.

Merchant's Gargling Oil.

See Gargling Oil.

Miller's Golden Oil.

Oil of lavender.....	fl.oz.	1
Oil of eucalyptus.....	fl.oz.	1
Oil of sassafras.....	fl.oz.	1
Oil of turpentine.....	fl.oz.	8
Cottonseed oil.....	fl.oz.	21

Mitchell's Eye Salve.

Petrolatum, white.....	gr.	350
White wax.....	gr.	180
Zinc oxide.....	gr.	45
Oxide of mercury.....	gr.	5
Oil of lavender.....	drops	10

Odontodol.

Cocaine hydrochlorate.....	part	1
Oil of cherry-laurel.....	part	1
Tincture of arnica.....	parts	10
Solution of ammonium acetate..	parts	20

Oleoz Co.

Oil of lavender.....	part	1
Oil of cloves.....	part	1
Oil of cinnamon.....	part	1
Oil of thyme.....	part	1
Oil of citron.....	part	1
Oil of mace.....	part	1
Oil of neroli.....	part	1
Peru balsam.....	parts	8
Deodorized alcohol.....	parts	240

Pasta Mack.

Sodium bicarbonate.....	av.oz.	5
Tartaric acid.....	av.oz.	4
Powdered starch.....	av.oz.	7
Sweet almond oil.....	fl.oz.	8
Oil of rose.....	drops	5
Oil of cloves.....	drops	2

Mix the first three ingredients, add the remaining substances, and beat the whole to a stiff paste.—N. I.

Patterson's Toothache Wax.

A toothache paste may be made by immersing absorbent cotton in melted paraffin wax colored with alkanet and containing 1 per cent of carbolic acid.

Phalon's Hair Restorative.

The following is recommended as a good preparation of its type:

Alcohol.....	fl.oz.	8
Castor oil.....	fl.oz.	1

Color this mixture with alkanet root and flavor with oils of bergamot, neroli, verbenal and orange.

Phenolid.

Goldman gives the following:

Acetanilid.....	part	1
Sodium salicylate.....	part	1

Phillip's Milk of Magnesia.

A Milk of Magnesia is given in Part I.

Phillip's Syrup of Wheat Phosphates.

Said to be similar to:

Wheat phosphates, Phillip's ...	fl.oz.	2
Simple syrup.....	fl.oz.	14

Phillip's Wheat Phosphates.

This preparation is said to be similar to Pepper's solution of acid phosphate with iron.

Pray's (Madam) Nail Polish.

Paraffin wax.....	gr.	60
Chloroform.....	fl.oz.	2
Oil of rose.....	drops	8

Quionin.

A mixture of about 10 per cent of quinine and 90 per cent of the other alkaloids of cinchona bark has similar physical properties.

Richmond's Samaritan Nervine.

The following is a typical "nervine:"

Potassium bromide.....	av.oz.	1
Sugar.....	av.oz.	1
Caramel.....	drops	20
Water.....	fl.oz.	5
Oil of cassia.....	drops	10

Roberts' Camphor-Tar Ointment.

A camphor-tar ointment may be made as follows:

Tar.....	av.oz.	1
Camphor.....	av.oz.	1
Lard.....	av.oz.	8

Roche's Embrocation.

I.

Oil of amber.....	fl.oz.	1
Oil of cloves.....	fl.oz.	1
Olive oil.....	fl.oz.	2

II.

Oil of amber, rectified.....	fl.oz.	2
Tincture of opium.....	fl.oz.	2
Lard.....	av.oz.	1

III.

Asafetida.....	gr.	160
Olive oil.....	fl.oz.	7½
Oil of caraway.....	fl.dr.	2
Oil of turpentine.....	fl.dr.	2

Digest the asafetida with the olive oil for some hours; decant and mix the solution with the other oils and add a few drops of oil of gaultheria.

Sal Muscatel.

See Tarrant's Aperient or Eno's Fruit Salt.

Schlotterbeck's Compound Mixture of Helonin.

See Compound Elixir of Helonias, Part I.

Schultze's Blood-Purifying Powder.

Sodium sulphate, dried.....parts 2
Magnesium sulphate, dried.....parts 14
Sodium chloride.....parts 8
Tartaric acid.....parts 8
Sodium bicarbonate.....parts 4

—Hager.

Seven Sutherland Sisters Scalp Cleaner.

This is said to be largely borax and salt.

Solutol and Solveol.

These are apparently mixtures of crude cresol and solution of soda containing 25 to 50 per cent of cresol.

Springsteen's Uterine Capsules.

According to a contribution to W. D., these are now sold under the name Viavi, which see.

Steedman's Soothing Powders.

The following is typical of its class:

Opium powder.....gr. 8
Ipecac.....gr. 1
Milk sugar.....gr. 8
Rice flour.....gr. 12

Mix and divide into 8 powders.

Swift's Syphilitic Specific.

The following is said to yield a satisfactory specific:

Fluid extract of fringe tree bark, fl. oz. 1
Fluid extract of prickly ash bark, fl. dr. 4
Fluid extract of white sumac, fl. dr. 2
Fluid extract of red sumac, fl. dr. 2
Fluid extract of sarsaparilla, fl. dr. 6
Copper sulphate.....gr. 8
Pyroligneous acid.....drops 20
Alcohol.....fl. oz. 4
Water, enough to make.....fl. oz. 16

Trask's Magnetic Ointment.

The following are types of "magnetic" ointments.

I.

Fine-cut tobacco,
Raisins,
Lard.....equal parts of each
Simmer together and strain.

II.

Cerate of subacetate of lead....gr. 480
Powdered opium.....gr. 80

Mix thoroughly.

Tritica.

An aqueous fluid extract of couch grass, preserved with about 10 per cent of alcohol, has similar physical properties.

Trix.

See No. 1, under Cachous, in Part III.

Viavi.

According to a contribution to W. D., a mixture of tannin, opium and cacao butter, put up in capsules, resembles this remedy. It is sold as a cure for female diseases.

Wampole's Laxative Compound.

A teaspoonful of this preparation is said to represent in liquid form an equal amount of compound licorice powder. The following will therefore approximately represent this preparation:

Fluid extract of senna.....fl. oz. 3
Fluid extract of licorice.....fl. oz. 4
Oil of fennel.....fl. dr. ½
Alcohol.....fl. dr. 2
Syrup, enough to make.....fl. oz. 16

Dissolve the oil in the alcohol, add to the fluid extracts, and then incorporate with the syrup.

Wistar's Cough Lozenges.

See Troches of Glycyrrhiza and Opium, U. S. P.

Wheeler's Elixir.

An elixir of this type consists of equal parts of elixir of cinchona and iron, N. F., and elixir calcium lacto-phosphate, N. F., flavored with bitter almond oil and colored with cochineal.

Zymoidin.

This is an antiseptic, said to be composed of oxides of zinc, bismuth and aluminum, with iodine, boric, carbolic, gallic and salicylic acids, quinine, etc.

PART IV.

VETERINARY PREPARATIONS.

Many of the formulas here offered, such as those for condition powders, liniments, poultry powders, etc., may be kept on hand in convenient form to be offered for counter sale.

SECTION I.—HORSE MEDICINES.

The following doses are intended for grown horses, since foals generally require treatment only for those diseases which are peculiar to foals. As a general rule the quantities ordered may be adjusted to suit the age of the animal, according to the following proportions: For a colt 1 year old, 25 per cent of the full dose; for a 2-year old, 50 per cent, and for a 3- or 4-year old, 75 per cent of the full dose.

Anæmia Medicines.

Anæmia is often due to lack of exercise in the open air; this condition is most marked in young animals. It may also be due to improper food. Treatment consists in iron and arsenic, giving green food if possible, and indulging in light exercise in the open air.

I.

Sulphurav.oz. 2
Potassium bicarbonate.....av.oz. 1
Sodium chloride.....av.oz. 20
Give one tablespoonful with each meal.

II.

Sulphurav.oz. 2
Antimony sulphide.....av.oz. 1
Ferrous sulphate.....av.oz. 1
Calamusav.oz. 2
Sodium sulphate.....av.oz. 6
Sodium chloride.....av.oz. 8
Reduce all to powder and mix well.
Give one tablespoonful with each meal.

III.

Saccharated iron carbonate....av.oz. 6
Manganese saccharate.....av.oz. 1
Cinnamonav.oz. ½
Cloves.....av.oz. ½
Calamus, in No. 8 powder....av.oz. 5
Sodium chloride (common salt).av.oz. 7
Sodium sulphate.....av.oz. 20
Reduce all to powder and mix well.
Give one tablespoonful at every meal.

IV. Fowler's solution.

Give one tablespoonful once daily upon bread.

Appetite, for Loss of.

Loss of appetite is often the result of disorders of digestion and may be the accompaniment or precursor of other diseases. The following remedies may be of value:

I.

Crude tartar (argols)av.oz. 1
Antimony sulphideav.oz. ½
Calamus root.....av.oz. 4
Gentianav.oz. 4
Juniper berries.....av.oz. 4
Caraway seedav.oz. 2
Mustard seed.....av.oz. 2
Rye flour.....av.oz. 2
Water.....sufficient

Mix the drugs in powder form and add enough water to form a mass or paste.

Spread 1 tablespoonful of this on the horse's tongue 3 times a day.

II.

Calamus.....av.oz. 1
Gentianav.oz. 1
Gingerav.oz. 1
Wormwoodav.oz. 1
Sodium chloride.....av.oz. 2
Rye flour.....av.oz. 2
Tincture of capsicum.....fl.dr. 2½
Water or simple syrup, sufficient
to form a mass

This is to be used like the preceding.

III.

Gentian root.....av.oz. 4
Sodium sulphate.....av.oz. 2
Sodium chloride.....av.oz. 1
Sodium bicarbonate.....av.oz. 1
Give 2 tablespoonfuls with each meal.

IV.

Crude tartar (argols)av.oz. 1
Antimony sulphide.....gr. 800
Potassium bicarbonate.....av.oz. 1½
Gentianav.oz. 1½
Caraway seed.....av.oz. 1½

Mix and divide into 10 powders.

Give 1 once a day mixed with the horse's feed.

V. See also Condition Powders.

Blister.**I.**

Cantharides, fine powder.....	av. oz. $\frac{1}{4}$
Euphorbium, fine powder.....	av. oz. $\frac{1}{4}$
Corrosive sublimate.....	av. oz. $\frac{1}{4}$
Mercurial ointment.....	av. oz. 2
Linseed oil.....	fl. dr. 4
Sulphuric acid.....	fl. oz. 1
Nitric acid.....	fl. oz. 1
Oil of turpentine.....	fl. oz. 4
Petroleum.....	fl. oz. 2

Add the sulphuric acid gradually to the linseed oil, then add the nitric acid very gradually, and after that the turpentine and petroleum. Let stand for several days, decant from residue, and mix with the decanted liquid the mercurial ointment, to which have previously been added the corrosive sublimate, cantharides and euphorbium.

Extreme care must be taken, in mixing the acids and oil, to add the acids very slowly, with constant stirring, to the oil contained in a broad vessel, such as an evaporating dish.

II.

Cantharides, powder.....	av. oz. $2\frac{1}{2}$
Oil of turpentine.....	fl. oz. $1\frac{1}{2}$
Acetic acid.....	fl. oz. 1
Lanolin.....	av. oz. 5
Petrolatum.....	av. oz. 5

Mix the first three and allow to stand for 24 hours, then add the lanolin and petrolatum melted on a water bath and mix, stirring until cold.

III.

Cantharides.....	av. oz. 1
Oil of turpentine.....	fl. oz. 8
Water of ammonia.....	fl. oz. 4
Olive oil.....	fl. oz. 2
Oil of sassafras.....	fl. oz. 1

IV.

Binioidide of mercury.....	gr. 60
Oil of cajuput.....	gr. 60
Petrolatum.....	gr. 480

Catarrh, Remedies for Bronchial.

Bronchial catarrh usually begins with fever and is generally accompanied by coughing, and the discharge of purulent matter from the nose. If the dry cough does not soon loosen, and there is no nasal discharge, the fomentations recommended under "Glands" should be employed. These fomentations should not be continued longer than

necessary to induce the discharge, as otherwise harm may result to the nasal mucous membrane. In addition to using the medicines mentioned below, warm applications should be bound around the throat and warm drinks should be administered.

I.

Ammonium chloride.....	av. oz. 1
Fenugreek.....	gr. 400
Fennel.....	gr. 400
Marshmallow.....	av. oz. 8

Reduce all to powder and mix well.

Give in 2 doses in warm meal or in warm "soft" food.

II.

Sodium chloride.....	av. oz. 10
Antimony sulphide.....	av. oz. 2
Fenugreek.....	av. oz. 1
Licorice root.....	av. oz. 1

All ingredients should be in powder and should be well mixed.

Give 1 tablespoonful with each meal.

III.

Sodium sulphate.....	av. oz. 4
Sodium chloride.....	av. oz. 4
Sodium bicarbonate.....	av. oz. 2
Licorice root.....	av. oz. 2

All should be in powder and should be well mixed.

Give 1 tablespoonful with each meal.

IV.

Mercurial ointment.....	av. oz. 2
Suet.....	av. oz. 3
Hyoscyamus oil.....	av. oz. 5

To be applied to the throat every morning and evening.

Carbolic Composition.

Hager has devised the following for veterinary and farmers' use. It keeps sores clean, cures scab and itch, and kills vermin, and is said to keep flies, mosquitoes and such insects from animals:

Benzoin.....	av. oz. 1
Aloes.....	av. oz. $\frac{1}{2}$
Salicylic acid.....	gr. 110
Oil of spike.....	fl. dr. 4
Oil of anise.....	fl. dr. 1
Alcohol.....	fl. oz. 12
Oleic acid, crude.....	fl. oz. 1
Caustic soda.....	gr. 250
Borax.....	gr. 110
Water.....	fl. oz. 6
Carbolic acid, crude.....	fl. oz. 30

Rub the benzoin, aloes and salicylic acid to a fine powder, and add them to the oils dis-

solved in the alcohol. After a day's maceration, add to the mixture the oleic acid, the soda and the borax dissolved in the water, and, lastly, the carbolic acid. Shake the whole well for half an hour, and after a week's maceration in a cool place decant the clear liquid. For use shake well with twice its bulk of water, and add 100 to 120 times its bulk of water, stirring thoroughly. For scab and itch dilution with only 80 or 40 times its bulk is necessary.

Cathartic Medicines.

I.

Cape aloes.....	av.oz.	1
Ginger.....	gr.	120
Potassium carbonate.....	gr.	60
Gamboge.....	gr.	60
Oil of fennel.....	drops	20

Make into a mass by means of powdered soap and water, roll into a cylinder about 2 inches long, and cover with gelatin or with thin paper, like tissue paper, suitably oiled or greased to prevent the adhesion of the mass to the paper.

II.

Cape aloes.....	av.oz.	1
Ginger.....	gr.	120
Potassium carbonate.....	gr.	60
Croton oil.....	drops	10
Oil of anise.....	drops	30
Water.....	fl.oz.	8
Linseed oil.....	fl.oz.	8
Tincture of opium.....	fl.dr.	4

Powder the aloes and ginger, add the potassium carbonate, mix with the water, add the oils of anise and croton, then the tincture and finally the linseed oil.

To be given at one dose. In cases of unusual weakness or prostration of the animal, the croton oil can be omitted.

In putting up this formula in large quantity for general sale, it would be better to substitute powdered gamboge for croton oil, using in the prescription above named 60 gr.

III. See also Colic Remedies and Constipation Cure.

Colic Remedies.

Colic is usually due to obstinate constipation and retention of urine; sometimes it is caused by diarrhoea. If due to the former, purgative and carminative remedies should

be administered. When the bowels and urinary organs begin to act, the colic generally ceases. During the course of treatment it is advisable to rub the back, abdomen and legs with a turpentine mixture until perspiration ensues.

I.

Chlorodyne.....	fl.oz.	1
Spirit of nitrous ether.....	fl.oz.	2
Linseed oil.....	fl.oz.	18

Give at one dose and repeat in 2 hours, if necessary.

II.

Ether.....	fl.oz.	2
Castor oil.....	fl.oz.	18

Give at one dose.

III.

Aloes.....	av.oz.	1½
Green soap.....	sufficient to form a mass	

Give at one dose as soon as colic appears.

IV.

Oil of turpentine.....	fl.oz.	4
Ammonia water.....	fl.oz.	1
Alcohol.....	fl.oz.	10

To be applied to the abdomen.

V. Hypodermic injections containing eserine may be employed, instead of internal remedies, to relieve colic due to constipation; these act much quicker than internal remedies.

A.

Eserine sulphate.....	gr.	1½
Distilled water.....	fl.dr.	1½

Dissolve and inject at one dose.

B.

Eserine sulphate.....	gr.	1½
Pilocarpine hydrochlorate.....	gr.	5
Distilled water.....	fl.dr.	2½

Use at one injection. The latter is particularly valuable when the colic is due to obstinate constipation.

When using these injections, the external treatment should be the same as otherwise.

VI.

Creolin.....	fl.dr.	4
Oil of turpentine.....	fl.oz.	2
Aromatic spirit of ammonia.....	fl.oz.	2
Tincture of asafetida.....	fl.dr.	2
Linseed oil.....	fl.oz.	24

For one dose.

VII.

Tincture of opium.....fl.oz. 1
 Ether.....fl.oz. 1
 Alcohol.....fl.oz. 1¼
 Oil of anise.....drops 80
 Give one tablespoonful every 15 to 30 minutes in a pint of water.

Rub the abdomen and back with straw, wet with oil of turpentine.

VIII.

Aloes.....av.oz. ¾
 Potassium carbonate.....gr. 45
 Water.....sufficient to form a bolus
 Give one such bolus every hour.

IX.

Tartar emetic.....gr. 45
 Sodium sulphate.....av.oz. 8
 Caraway.....av.oz. 1
 Make one powder, and give one such powder every half-hour until the bowels move.

X.

Magnesium sulphate.....av.oz. 18
 Althæa.....av.oz. 8½
 Rye flour.....av.oz. 8½
 Add water or simple syrup to form a mass.
 Give one-half of this mass and repeat the dose in one-half hour.

XI.

Sodium sulphate.....av.oz. 18
 Juniper berries, coarse powder.....av.oz. 8½
 Rye flour.....av.oz. 8½
 Make into a mass or paste with simple syrup or glucose.

This is to be administered like the preceding. It is to be given when the colic is due to both constipation and retention of urine.

XII.

Alum.....gr. 300
 Althæa.....av.oz. 1
 Ginger.....av.oz. ½
 White oak bark.....av.oz. 1½
 Juniper berries.....av.oz. 1½

All of these should be in powder and should be formed into a mass with glucose or molasses.

One-fourth of this mixture is to be given every hour. It is of value when the colic is caused by diarrhœa.

XIII.

Tincture of opium.....av.oz. 1
 Spirit of peppermint.....fl.oz. 1
 Spirit of nitrous ether.....fl.oz. 1
 Ether.....fl.oz. 1
 Sodium bicarbonate.....gr. 240
 Diluted alcohol.....fl.oz. 4
 Linseed oil.....fl.oz. 4

Mix these substances and dispense in heavy bottles.

The quantity named can be used at one dose if a very severe case, and even repeated if the exigency demands it; otherwise, the above recipe can be divided into two doses.

Condition Powders.

These preparations are also known as "Horse Powders," "Horse and Cattle Food" and "Stock Food." Pharmacists frequently dispense preparations of this character made by themselves; as titles, they may select those given above, also such as "Maud S. Condition Powder," "Prairie Condition Powder," "Farmer's Condition Powder," "Arabian Condition Powder," "O. K. Condition Powder," etc.

The following list will be of interest, as well as of service, in determining what ingredients may enter into the composition of a condition powder:

Alteratives.—Sodium hyposulphite, sulphur.

Diuretics and Diaphoretics.—Alum, black antimony, buchu, cream of tartar, pure and crude; juniper berries, lobelia, potassium nitrate, resin.

Expectorants.—Blood root, potassium chlorate, elecampane, licorice root, lobelia, resin.

Tonics.—Iron carbonate, gentian, cinchona, poplar bark, iron sulphate.

Aromatics and Correctives.—Anise, sodium bicarbonate, camphor, cascarilla, capsicum, cumin seed, fenugreek, ginger, grains of paradise, mustard, salt, sassafras.

Emollients and Laxatives.—Aloes, magnesium sulphate, flaxseed meal, sodium sulphate, oil cake meal.

Sedatives.—Asafetida, digitalis, skunk cabbage, valerian.

The usual dose of these powders is about 1 tablespoonful 2 or 3 times daily in food.

I.

Black antimony.....av.oz. 8
 Sulphur.....av.oz. 7
 Elm bark.....av.oz. 3¼
 Resin.....av.oz. 1½
 Potassium nitrate.....av.oz. 1½
 Anise seed.....av.oz. ¾

Reduce all to powder and mix well.

II.

Elecampane	av.oz. 8
Fenugreek	av.oz. 8
Linseed	av.oz. 8
Juniper berries	av.oz. 8
Poplar bark	av.oz. 8
Resin	av.oz. 8
Licorice root	av.oz. 6
Ginger	av.oz. 6
Sodium sulphate	av.oz. 6
Sodium chloride	av.oz. 6
Sulphur	av.oz. 6
Copperas	av.oz. 6
Sodium carbonate	av.oz. 4
Gentian	av.oz. 4
Black antimony	av.oz. 2
Potassium nitrate	av.oz. 2
Coriander seed	av.oz. 2
Valerian	av.oz. 2
Blood root	av.oz. 1
Lobelia	av.oz. 1
Podophyllum	av.oz. 1
Dried alum	av.oz. 1

III.

Fenugreek	av.oz. 16
Sulphur	av.oz. 8
Cream of tartar	av.oz. 4
Potassium nitrate	av.oz. 4
Licorice root	av.oz. 4
Black antimony	av.oz. 2
Gentian	av.oz. 1
Anise	av.oz. 1
Common salt	av.oz. 1

IV.

Sodium chloride	av.oz. 1
Fenugreek	av.oz. 4
Licorice root	av.oz. 4
Flaxseed, ground	av.oz. 7

Give 1 ounce daily.

V.

Black antimony	av.oz. 1
Resin	av.oz. 1
Capsicum	av.oz. 1
Gentian	av.oz. 2
Fenugreek	av.oz. 2
Sulphur	av.oz. 2
Saltpeter	av.oz. 2
Cream of tartar	av.oz. 2
Ginger	av.oz. 2
Licorice	av.oz. 8

Dose, one tablespoonful once or twice a day.

VI.

Gentian	av.oz. 16
Anise	av.oz. 16
Ginger	av.oz. 4
Sulphate of iron	av.oz. 2
Potassium nitrate	av.oz. 8
Fenugreek	av.oz. 6

Dose, one dessertspoonful in the feed, morning and night.

VII.

Cream of tartar	av.oz. 8
Sulphur	av.oz. 8
White resin	av.oz. 8
Guaiac resin	av.oz. 5
Potassium nitrate	av.oz. 3
Gentian	av.oz. 8
Golden sulphuret of antimony	gr. 240

Reduce all to powder and mix well.

This powder is to be recommended if an alterative is desired.

VIII.

Elecampane	av.oz. 4
Licorice root	av.oz. 4
Linseed	av.oz. 4
Fenugreek	av.oz. 4
Resin	av.oz. 4
Anise	av.oz. 2
Capsicum	av.oz. 2
Gentian	av.oz. 2
Potassium nitrate	av.oz. 2
Valerian	av.oz. 2
Sulphur	av.oz. 2
Copperas	av.oz. 2
Juniper berries	av.oz. 2
Black antimony	av.oz. 1
Sodium sulphate	av.oz. 1
Sodium chloride	av.oz. 19
Ground oil cake	av.oz. 19

IX.

Exsiccated iron sulphate	av.oz. 5
Cantharides	av.oz. 1
Ginger	av.oz. 8
Black antimony	av.oz. 6
Potassium nitrate	av.oz. 5
Sulphur	av.oz. 10
Flaxseed	av.oz. 10
Gentian	av.oz. 7
Cream of tartar	av.oz. 3
White resin	av.oz. 5
Anise	av.oz. 5

Reduce all to powder and mix well.

Condition Powder, Darby's.

Sodium sulphate	av.oz. 8
Sulphur	av.oz. 4
Fenugreek	av.oz. 4
Gentian	av.oz. 2
Black antimony	av.oz. 2

Reduce all to fine powder and mix well.

Constipation Cure.

For constipation, the usual cathartics may be administered. The remedies mentioned under "Colic" as useful in this latter complaint resulting from constipation, may be employed.

See also Cathartics.

Cough Remedies.

Coughs should be treated by binding warm applications about the throat or making fomentations as described under "Glanders." If the nasal secretion is too copious, it may be checked by means of a powder containing lead acetate. In addition the following remedies may be employed:

I.

Antimony sulphide.....av.oz. 1
Licorice root.....av.oz. 2
Sodium chloride.....av.oz. 5

Mix all in powder form.

Give two tablespoonfuls after each meal.

II.

Sodium chloride.....av.oz. 10
Antimony sulphide.....av.oz. 2
Buckthorn berries.....av.oz. 1
Licorice root.....av.oz. 1

Mix all in powder form.

Give one tablespoonful after each meal.

III.

Ammonium chloride.....av.oz. 3½
Antimony sulphide.....gr. 300
Crude tartar (argols).....av.oz. 1½
Linseed Meal.....av.oz. 7

Divide into 6 powders and give one of these in a mucilaginous or starchy drink twice a day.

IV.

Mustard, powder.....av.oz. 8
Wheat bran.....av.oz. 24

Stir the mixed powders with sufficient water heated to 70 to 75 degs. C. to make a poultice in the usual manner.

The addition of the mustard makes the poultice somewhat of a counter-irritant, but without being so severe as a strong mustard plaster.

V.

Lead acetate.....gr. 45
Sugar.....av.oz. 1

Mix, reduce to powder, and divide into three parts.

One of these portions is to be given with food or in drink three times daily.

VI.

Ammoniac.....gr. 120
Ipecac.....gr. 120
Squill.....gr. 60
Licorice.....gr. 60

Make into a mass with syrup or honey.

VII.

Camphor, powder.....gr. 180
Potassium chlorate, powder.....av.oz. 1½
Belladonna leaves, powder.....av.oz. 1½
Anise, powder.....av.oz. 2

Mix and divide into 6 powders.

Give one twice a day in food.

VIII.

Althæa.....av.oz. 4
Licorice.....av.oz. 4
Elecampane.....av.oz. 2
Kermes' Mineral.....av.oz. 2
Honey.....sufficient to form a mass

Divide into 12 balls.

IX.

Ipecac.....gr. 60
Squill.....gr. 60
Licorice.....gr. 120

Mix into a ball with syrup or honey.

X.

Aconite leaves, powder.....gr. 360
Digitalis, powder.....gr. 240
Arsenic.....gr. 4
Anise, powder.....gr. 240

Mix, and divide into 6 powders.

Give one every night in food.

This remedy is useful in chronic cough.

Diarrhoea Remedies.

Diarrhoea is often the result of "catching cold," but may also be the precursor or accompaniment of other disorders. Mild cases may be cured by giving dry fodder and warming the drinks. In severer cases, aromatic and bitter substances may be administered, and in some cases astringents may be required. Applications should be made to the entire abdomen; the whole body should be rubbed with a brush of straw or hay, and then covered with blankets so as to retain the perspiration produced by the rubbing. This rubbing of the entire body should be repeated every 3 hours.

I.

Alum.....av.oz. 2
Calamus root.....av.oz. 5
Angelica root.....av.oz. 5
Wormwood.....av.oz. 5
Rye flour.....av.oz. 5
Water.....sufficient

All the drugs should be in powder and enough water should be added to form a paste.

Place a lump, the size of a hen's egg, on

the tongue every 5 hours, between meals.
This is intended for mild cases only.

II.

Iron sulphate, powderav.oz. $\frac{1}{2}$
Althæa, powderav.oz. 8
Watersufficient to form a mass

Divide into two doses, and give these within 3 hours of each other.

This is also intended for mild cases.

III.

Oak bark (red or white), powderav.oz. $1\frac{1}{4}$
Alum, powdergr. 150
Althæa, powderav.oz. $1\frac{1}{4}$
Rye flourav.oz. $1\frac{1}{4}$
Water sufficient to form a mass or paste

Divide into two parts, and give them 5 hours apart.

This is also employed in mild cases.

IV.

Iron sulphate, powderav.oz. 1
Alum, powderav.oz. 1
Oak bark (red or white)av.oz. 2
Calamus rootav.oz. 2
Rye flourav.oz. 4
Water sufficient to form a mass or paste

Place a piece the size of a hen's egg upon the tongue every 2 hours.

This is intended for severer cases.

V.

Alum, powdergr. 300
Althæa, powderav.oz. 1
Simple syrup or molassessufficient

Make 2 pills, and give them 2 hours apart.

This is employed in mild cases.

VI.

Tanninav.oz. 1
Althæa, powderav.oz. $1\frac{1}{2}$
Simple syrup, molassessufficient

Divide into 3 pills and give 1 pill every evening.

This is used in the more obstinate cases.

VII.

Spirit of mustardfl.oz. 2
Oil of turpentinefl.oz. 2
Spirit of soapfl.oz. 4

Sprinkle half of this on the belly, rub it in and cover with a woolen cloth. Repeat in 5 hours.

Diuretics.

See Remedies for Urinary Diseases.

The following may also be recommended:

Fluid extract of buchufl.oz. 1
Fluid extract of uva ursifl.oz. 1
Sweet spirit of nitrefl.oz. 2
Potassium acetatefl.dr. 4
Ginfl.oz. 1
Tincture of opiumfl.oz. 1
Glycerinfl.dr. 12
Waterfl.oz. 8

Give 1 or 2 fluidounces at a dose.

It sometimes happens that the animal is simply afflicted with a slight disturbance of the kidneys, producing what is termed by horsemen and veterinary surgeons, yellow water; for this ailment a simpler remedy is demanded, and the following will prove of service:

Fluid extract of buchufl.oz. 2
Sweet spirit of nitrefl.oz. 4
Potassium nitrateav.oz. 1
Anise waterfl.oz. 9

Give one or two tablespoonfuls at a dose, night and morning, for 3 days, and then in the morning only, for one week.

Dyspepsia and Indigestion, Remedies for.

I.

Sodium chlorideav.oz. 5
Sodium bicarbonateav.oz. 2
Calamus root, powderav.oz. 1
Reduced irongr. 90

Give one tablespoonful with each meal.

II.

Arsenious acidgr. 36
Potassium bicarbonateav.oz. 2
Wormwoodav.oz. 2
Sodium sulphateav.oz. 2

Mix and divide into 12 powders.

Give one powder once daily on food.

Eyes, Inflammation of the.

The eye must be protected from bright light; it should be bathed three times daily with water not too cold and covered with cloths moistened with lead water. In severe cases, aloes pills should be given sufficient to produce purgation, the cheeks should be rubbed with an irritant ointment, and instead of using lead water, apply the following solutions:

I.

Zinc sulphategr. 15
Distilled waterfl.oz. 15
Mix and dissolve.

Fold a cloth so as to form four thick-

nesses, lay over the inflamed eye and moisten with the solution; repeat the moistening every 2 hours.

II.

Zinc sulphate.....gr. 15
Crocatod tincture of opium....fl.dr. 1½
Infusion of elder flowers.....fl.oz. 16

Mix and dissolve. Tincture of opium may be substituted for the crocatod tincture. The infusion may be prepared from 1 av. ounce of drug; plain water may be substituted, if desired, for the infusion.

This preparation is to be applied like the preceding.

III.

Silver nitrate.....gr. 5
Distilled water.....fl.oz. 2

Mix and dissolve.

Drop 2 or 3 drops into the eye once daily after washing with water.

Fever Medicines.

Fever in the horse is the result of other diseases. The normal temperature is 37 to 38 degs. C. and may rise in the febrile condition to 40 or even to 41 degs. C.

I.

Potassium nitrate.....av.oz. 1
Sodium sulphate.....av.oz. 10
Rye flour.....av.oz. 4

Make into a mass or paste with simple syrup, glucose, or molasses.

Give one-half in the morning and the other in the evening.

II.

Sodium salicylate.....av.oz. 8
Licorice root.....av.oz. 2
Rye flour.....av.oz. 2

Make into a mass with water.

Give one-half of this mixture one morning and the remainder the following morning.

III.

Quinine sulphate.....av.oz. 1
Althæa.....av.oz. 8

Make into mass with syrup and divide into 4 pills.

Give the four pills during two consecutive days, one each morning and evening.

This medicine is used during malarial or intermittent fever.

IV.

Salol.....gr. 300
Althæa.....gr. 300

Make a mass with simple syrup or glucose and divide into two pills.

Both pills are to be given at one dose.

This remedy is valuable in rheumatic fever.

V.

Acetanilid.....gr. 300
Althæa.....av.oz. 1

Form into a mass with simple syrup and divide into two boluses.

Give one bolus in the morning and one in the evening.

These pills are of special value against the fever accompanying influenza, glanders, etc.

VI.

Tincture of aconite root.....fl.oz. 1
Tincture of veratrum viride....fl.oz. 1
Sweet spirit of nitre.....fl.oz. 8
Gin.....fl.oz. 8
Water.....fl.oz. 8

Give one-half to one tablespoonful every four or six hours, until the fever abates.

Founder, Remedies for.

See Rheumatism.

Gall, for Saddle.

Blisters or galls are brought about by badly fitting harness or saddles, which produce local sores very difficult to cure. The sores should be washed two or three times a day with water; the ointment should then be applied 2 or 3 times daily on clean soft cloths.

I.

Zinc oxide.....av.oz. 1
Water.....av.oz. 1
Salicylic acid.....av.oz. ½
Mutton tallow.....av.oz. 2½
Lard.....av.oz. 5

II.

Lead plaster.....av.oz. 4
Mutton tallow.....av.oz. 2½
Lard.....av.oz. 8
Salicylic acid.....av.oz. ½

III.

Tannin.....av.oz. 1
Camphor, powder.....av.oz. 2
Zinc oxide.....av.oz. 8

Mix and sift through a fine sieve.

Sprinkle on the raw or injured surfaces,

after having washed them with tepid water and carbolic soap.

IV.

Tannin.....	av.oz. 1
Camphor, powder.....	av.oz. 1
Golden seal, powder.....	av.oz. ½
Compound tincture of benzoin.....	fl.oz. 6
Glycerin.....	fl.oz. 10

V. A most valuable remedy in veterinary practice for all kinds of sores, bruises, cuts, or whenever the skin is broken is the application of "Friar's Balsam," the compound tincture of benzoin of the U. S. P., and may be profitably put up under some appropriate name and sold by pharmacists.

Glanders or Strangles, Remedies for.

This is a rather common disease and may result from contracting cold as well as from infection. Two forms are distinguished, a benign and a malignant form; the remedies mentioned apply only to the former.

The diseased horse is languid, perspires easily, has diminished appetite, and coughs. From the inflamed nostrils flows a discharge, watery at first, later becoming thick and mucous. When the secretion assumes the latter character, a swelling appears in the throat, which interferes with mastication. This swelling will become purulent, break open and discharge, and subsequently will heal, after which the horse appears quite well.

Treatment consists in keeping the animal warm by covering with a woolen blanket, also binding a cloth about the throat. Internally give mild cathartics, and assist the process of the swelling by the application of suitable ointments or even by means of poultices.

I.

Antimony sulphide.....	av.oz. 1
Sulphur.....	av.oz. 1
Fennel seed.....	av.oz. 1
Calamus root.....	av.oz. 1
Juniper berries.....	av.oz. 2
Rye flour.....	av.oz. 2
Oil of turpentine.....	fl.dr. 1½
Water...sufficient to make a confection	

Give a mass the size of a duck's egg four times a day.

This is recommended for obstinate cases.

II.

Antimony sulphide.....	av.oz. 2½
Ammonium chloride.....	av.oz. 3
Sulphur.....	av.oz. 8
Juniper berries.....	av.oz. 9
Sodium sulphate.....	av.oz. 9
Rye flour.....	av.oz. 10
Water...sufficient to make a confection	

Give a mass the size of a duck's egg every two hours.

III.

Antimony sulphide.....	av.oz. 1
Sodium sulphate.....	av.oz. 5
Juniper berries.....	av.oz. 2

Give one tablespoonful with each meal.

IV.

Antimony sulphide.....	av.oz. 1
Sulphur.....	av.oz. 1
Sodium sulphate.....	av.oz. 10
Licorice root.....	av.oz. 4
Buckthorn berries, crushed.....	av.oz. 4

Mix one tablespoonful with each meal.

V.

Buckthorn berries, coarse powder..	
.....	av.oz. 2
Anise seed.....	av.oz. 2
Sodium chloride.....	av.oz. 5
Sodium bicarbonate.....	av.oz. 1

Strew two teaspoonfuls on each meal.

This is intended for mild cases.

VI.

Linseed meal.....	av.oz. 2
Chamomile, coarse powder.....	av.oz. 2
Wheat bran.....	av.oz. 6

Mix the above with hot soapsuds, and cover the swelling of the neck with the poultice.

VII.

Ammonia liniment.....	fl.oz. 4
Oil of turpentine.....	fl.oz. 4

Rub the neck with this liniment three times a day.

VIII.

Mercurial ointment.....	av.oz. 3
Green soap.....	av.oz. 3
Glycerin.....	fl.oz. 5

Rub the neck twice a day with this liniment.

IX.

Ammonium carbonate.....	gr. 150
Carbolic acid.....	fl.dr. 1½
Oil of turpentine.....	fl.dr. 2½
Water.....	fl.oz. 2½

Put about seven ounces of hayseed into a basin, pour hot water into it, and to this add

the above ingredients; cover the horse's head with a cloth, and stir its contents thoroughly, so as to facilitate the liberation of the steam. Keep this up for a quarter of an hour. Repeat the treatment once each day.

This is employed to promote the nasal secretion.

Heave Medicines.

I.

Sodium sulphate.....	av.oz. 10
Elecampane.....	av.oz. 10
Lobelia.....	av.oz. 10
Resin weed.....	av.oz. 10
Gentian.....	av.oz. 8
Blood root.....	av.oz. 8
Tartar emetic.....	av.oz. 1
Alum.....	av.oz. 5
Fenugreek.....	av.oz. 5
Linseed.....	av.oz. 15

II.

Resin weed.....	av.oz. 10
Lobelia.....	av.oz. 10
Elecampane.....	av.oz. 10
Sodium sulphate.....	av.oz. 10
Linseed.....	av.oz. 15
Fenugreek.....	av.oz. 5
Alum.....	av.oz. 5
Conium.....	av.oz. 8
Bloodroot.....	av.oz. 8
Gentian.....	av.oz. 8
Tartar emetic.....	av.oz. 1

III.

Lobelia.....	av.oz. 2
Skunk cabbage.....	av.oz. 4
Elecampane.....	av.oz. 4
Tartar emetic.....	av.oz. 1
Licorice root.....	av.oz. 5

This may be diluted if desired with linseed meal, fenugreek, or other drugs.

IV.

Balsam of fir.....	av.oz. 4
Balsam of copaiba.....	av.oz. 4
Calcined magnesia.....	sufficient

Mix the first two ingredients and add magnesia until the mixture is sufficiently thick to form into balls.

Give a medium sized ball night and morning for a week or ten days.

Heels, Ointment for Cracked.

Sulphur.....	av.oz. 1
Lead acetate, powder.....	av.oz. ½
Creolin.....	fl.dr. 4
Oil of eucalyptus.....	fl.dr. 4
Petrolatum.....	av.oz. 4
Lanolin.....	av.oz. 4

Apply twice daily.

Hoofs, Preparations for the.

Aside from the appearance which it gives a horse's hoofs, the occasional use of a good hoof-dressing really promotes the comfort of the animal and prevents brittleness of the hoof. The following are simple and useful formulas for this purpose:

I.

Oil of origanum.....	fl.oz. 1
Camphor.....	av.oz. 1
Lard.....	av.oz. 16

Apply twice every week or two.

II.

Tar.....	av.oz. 8
Tallow.....	av.oz. 8

Use like the preceding.

III.

Petrolatum.....	av.oz. 16
Carbolic acid, crystal.....	gr. 180
Camphor.....	gr. 90
Oil of tar.....	fl.dr. 8
Oil of origanum.....	fl.dr. 1

IV.

Should there be any disease of the hoof as hoof-bound, etc., the following ointment will produce satisfactory results:

Camphor.....	av.oz. 1
Balsam of fir.....	av.oz. 1
Oil of cajuput.....	fl.dr. 2½
Compound tincture of iodine.....	fl.dr. 5
Oil of turpentine.....	fl.oz. 1
Lard.....	av.oz. 5½

V.

The following cement is useful for cracked hoofs:

Ammoniac.....	av.oz. 8
Gum turpentine.....	av.oz. 1
Gutta percha.....	av.oz. 6

The first two are melted together by means of a water bath, then added to gutta percha, previously melted, with constant agitation. If a black color is desired lampblack may be added.

When used the cement should be softened in hot water and pressed in the hoof crack, which has previously been well cleaned.

Indigestion, Remedies for.

See Remedies for Dyspepsia and Indigestion.

Influenza Remedies.

The early symptoms of this disease are languor and loss of appetite. After one or

two days there is fever and an increased pulse-rate; the thirst increases while the appetite diminishes. Internal and external remedies are used, the latter being usually of an irritant character.

I.

Ammonium chloride.....	av.oz. 8
Potassium nitrate.....	av.oz. 8
Sodium sulphate.....	av.oz. 10
Licorice root.....	av.oz. 6½

All should be in fine powder and well mixed.

Give one tablespoonful in warm soft food three times a day.

II.

Camphor, powder.....	gr. 75
Potassium nitrate.....	gr. 800
Aloes.....	av.oz. 1
Linseed meal.....	gr. 400

Water, sufficient to make two boluses

Give one pill every three hours.

III.

Alum.....	gr. 150
Tannin.....	gr. 40
Licorice, powder.....	gr. 200

Simple syrup, sufficient to make bolus

Give one pill every five hours.

This is used for the diarrhoea which often manifests itself.

IV.

Aloes.....	gr. 300
Dried sodium sulphate.....	av.oz. 8½
Linseed meal.....	av.oz. 1½
Soft soap (green soap).....	gr. 800

Simple syrup, enough to form an electuary

Give in two doses with an interval of two hours.

This is used as a purgative if one be required.

V.

Oil of turpentine.....	fl.oz. 8
Spirit of camphor.....	fl.oz. 17

Sprinkle the abdomen, rub with a wisp of straw, and bind a warm wrap about the abdomen.

VI.

Chlorodyne.....	fl.oz. 1
Spirit of nitrous ether.....	fl.oz. 2
Solution of ammonium acetate.....	fl.oz. 2
Water.....	fl.oz. 10

This dose is to be given every three hours during the first stage when there is much shivering.

Liniments.

These preparations may be dispensed under such names as "Horse Liniment," "Veterinary Liniment," "Barbed Wire Liniment," "Stable Liniment," etc.

Many of the liniments in Part II may also be used as veterinary liniments.

I.

Oil of turpentine.....	fl.oz. 15
Carbolic acid, crude.....	fl.oz. 2
Benzine.....	fl.oz. 15
Oil of tar.....	fl.dr. 4
Oil of spike.....	fl.dr. 4
Camphor.....	gr. 120
Capsicum.....	gr. 120

II.

Camphor.....	av.oz. 1
Carbolic acid.....	fl.oz. 1
Oil of origanum.....	fl.oz. 2
Oil of tar.....	fl.oz. 2
Crude petroleum.....	fl.oz. 2
Oil of turpentine.....	fl.oz. 12
Liquid petrolatum.....	fl.oz. 12
Benzine.....	fl.oz. 16

III.

Oil of turpentine.....	fl.oz. 16
Camphor.....	av.oz. 1
Soap (soft or green).....	av.oz. 2
Water.....	sufficient

Mix the soap with about 2 fluidounces of water, dissolve the camphor in the turpentine, mix the two and reduce to the desired consistence by the addition of water.

IV.

Oil of turpentine.....	fl.oz. 4
Stronger water of ammonia.....	fl.oz. 4
Olive oil.....	fl.oz. 4

This preparation is used as a throat liniment.

Mange or Scabies Remedies.

Scabies is most apt to affect old or ill-fed horses and generally appears on the side of the neck, on the shoulder, the back, the hips, at the root of the tail and on the feet.

In all cases the first thing to be done is to wash the affected parts with a warm solution of green soap (medicinal soft soap). The animal must also be separated from the others, and special care taken in feeding and grooming it.

I.

Mercurial ointment.....	av.oz. 8
Salicylic acid.....	av.oz. ½
Lard.....	av.oz. 6½

Wash the affected parts with a solution of

green soap; dry, and apply this ointment once a day.

This ointment is recommended for foot scabies.

II.

Creosote.....	fl.oz.	2
Green soap.....	av.oz.	10
Alcohol.....	fl.oz.	6

Mix and apply to the affected parts after washing and drying them.

III.

Sulphurated potassa.....	av.oz.	$\frac{3}{4}$
Green soap.....	av.oz.	$1\frac{1}{2}$
Water.....	fl.oz.	14
Oil of turpentine.....	fl.dr.	$1\frac{1}{2}$

Dissolve the soap and the potassa in the water by the aid of heat, and then add the oil of turpentine.

Wash the affected parts with a weak soda solution, dry with a cloth, and then moisten with the above wash. Repeat this twice each day.

IV.

Pine tar.....	av.oz.	10
Green soap.....	av.oz.	5
Alcohol.....	av.oz.	3
Sulphur.....	av.oz.	2

Mix with the aid of a gentle heat.

Wash the affected parts with warm soap and water, dry with a cloth and spread this salve on with a brush, repeating the application in eight days. As a rule two applications suffice. The salve or paint eventually falls off of itself.

Mosquito Oil.

Carbolic acid.....	fl.oz.	2
Oil of pennyroyal.....	fl.oz.	4
Spirit of camphor.....	fl.oz.	4
Oil of tar.....	fl.oz.	8
Glycerin.....	fl.oz.	4
Lard oil.....	fl.oz.	8

This is an effective preparation for keeping flies and mosquitoes off horses.

Ointments.

Ointments are a class of very useful remedies for the treatment of some of the diseases of stock. Every pharmacist should have on hand, ready for sale, a good veterinary ointment.

I.

Compound tincture of iodine....	fl.oz.	2
Camphor.....	av.oz.	2
Oil of sassafras.....	fl.oz.	1
Lard.....	av.oz.	15

II.

Camphor.....	av.oz.	3
Tannin.....	av.oz.	$\frac{1}{2}$
Carbolic acid, crystal.....	av.oz.	1
Oil of origanum.....	fl.oz.	1
Zinc oxide.....	av.oz.	8
Lard.....	av.oz.	16

III.

Some of the ointments mentioned under "Preparations for the Hoof" and "Remedies for Galls" may also be recommended for general use.

Quitter Oil.

Ointment of nitrate of mercury.....	av.oz.	1
Cottonseed oil.....	fl.oz.	3

Mix together by aid of a gentle heat.

Rheumatism and Rheumatic Inflammation of the Feet (Founder). Remedies for.

This disorder of horses is very common. Usually the soft parts of the hoof are affected; the animal then steps with exceeding caution; it lies down mostly when in the stall, and groans frequently; the pulse-rate is increased, and sometimes there is fever.

Purgative remedies should be given, either by the mouth or by enema, and care should be taken that there is a normal flow of urine. Stimulant applications should be made externally. Only half rations should be allowed the sick animal, and the food should be of an easily digestible character.

I.

Camphor, powder.....	av.oz.	$\frac{1}{4}$
Potassium nitrate, powder.....	av.oz.	2
Sodium sulphate, powder.....	av.oz.	8
Juniper berries, crushed.....	av.oz.	4
Rye flour.....	av.oz.	$3\frac{1}{2}$
Water.....	sufficient	

Make into an electuary and give one-fourth of the whole every five hours.

II.

Aloes, powder.....	av.oz.	1
Sodium sulphate, powder.....	av.oz.	8
Rye flour.....	av.oz.	$3\frac{1}{2}$
Water.....	sufficient	

Make into an electuary, divide into two parts and give three hours apart. This is used when there is fever.

III.

Ammonia liniment.....	fl.oz.	10
Oil of turpentine.....	fl.oz.	2

Rub in well twice daily.

IV.

Spirit of camphor.....f.oz. 12
Tincture of capsicum.....f.oz. 1
Oil of turpentine.....f.oz. $\frac{3}{4}$
Rub on the lame foot three times a day.

V.

Benzoic acid.....av.oz. $8\frac{1}{2}$
Sodium sulphate, powder.....av.oz. $1\frac{1}{2}$
Rye flour.....av.oz. $8\frac{1}{2}$
Water.....sufficient

Make into an electuary and give one-quarter of the whole every twelve hours. This is to be given when there is fever.

Shoulder, for Lamé.

Spirit of soap.....f.oz. 5
Spirit of camphor.....f.oz. 5
Ammonia water.....f.oz. 1

Apply several times daily. See also No.

V under "Rheumatism."

If the lameness be of a rheumatic character sodium salicylate should be given.

Sinews, for Strained.

I.

Ammonium chloride.....f.dr. 2
Spirit of camphor.....f.dr. 2
Diluted acetic acid.....f.oz. 5
Water.....f.oz. 15

Mix and apply on a cloth morning and evening for at least eight days.

II.

Tincture of capsicum.....f.oz. 3
Alcohol.....f.oz. 4
Spirit of camphor.....f.oz. 2
Spirit of ether.....f.oz. 2
Oil of turpentine.....f.dr. $1\frac{1}{2}$
Ammonia water.....f.dr. 3
Ammonium chloride.....av.oz. 1
Sodium chloride.....gr. 180
Water.....f.oz. 7

Dissolve the salts in the water and add the remaining ingredients.

Shake up the embrocation well. Dilute half a pint of the fluid with pint and a half of water and with this wash the entire length of the leg and then wrap it up in a woollen bandage.

III.

Spirit of ammonia.....f.oz. 5
Spirit of camphor.....f.oz. 5
Spirit of ether.....f.oz. 5
Oil of turpentine.....f.oz. 1

Use like the preceding.

IV.

Sodium chloride.....av.oz. 1
Spirit of camphor.....f.oz. 1
Tincture of arnica.....f.oz. 2
Water.....f.oz. 4
Use this like the preceding.

Spavin and Ringbone Cures.

I.

Oil of turpentine.....f.oz. 8
Alcohol.....f.oz. 8
Tincture of iodine.....f.oz. 8
Camphor.....av.oz. 4
Crude petroleum.....f.oz. 1
Oil of rosemary.....f.dr. 4

II.

Oil of turpentine.....f.oz. $14\frac{1}{2}$
Alcohol.....f.oz. 13
Tincture of iodine.....f.oz. $1\frac{1}{4}$
Camphor.....av.oz. $1\frac{1}{4}$
Oil of sassafras.....f.oz. $1\frac{1}{4}$
Crude petroleum.....f.oz. 1
Corrosive sublimate.....gr. 70

Dissolve the camphor and the corrosive sublimate in the alcohol and add the remaining ingredients.

III.

Venice turpentine.....av.oz. 2
Cantharides, powder.....av.oz. 2
Euphorbium, powder.....av.oz. 1
Red precipitate.....av.oz. 1
Lard.....av.oz. 24

Mix all, simmer slowly for an hour, avoiding burning or scorching, and pour off the liquid from the sediment.

For ringbone cut off the hair and rub the ointment well into the lumps once in 48 hours. For spavins, apply once in 24 hours for three mornings. Wash well, previous to each application, with clean soapsuds, rubbing over the places with a smooth stick to remove the thick yellow matter.

IV.

Cantharides, powder.....av.oz. 4
Oil of origanum.....f.oz. 4
Oil of amber.....f.oz. 4
Oil of turpentine.....f.oz. 4
Cottonseed oil.....f.oz. 4
Sulphuric acid.....f.oz. 1

Mix all except the acid in a broad, shallow vessel such as an evaporating dish, then very slowly and with constant and rapid stirring add the acid; when the liquid has cooled it may be bottled.

For ringbone or spavin apply with a sponge tied to the end of a stick, until it is

no longer absorbed into the parts; 24 hours afterwards grease well with lard, and in 24 hours more wash off with clean, warm soap-suds. Two or three applications 3 or 4 days apart may be required.

V.

Mercurial ointment.....av.oz. 3
Salicylic acid.....av.oz. 1
Lard.....av.oz. 6

Rub the spavin daily with the ointment for a week.

This is used only for mild cases.

VI.

Cantharides.....av.oz. 2
Euphorbium.....av.oz. 1
Salicylic acid.....av.oz. 1
Gum turpentine.....av.oz. 3
Lard.....av.oz. 2
Cottonseed oil.....fl.oz. 1

Mix, heat for one hour at a temperature of 50 to 70 degs. C., and stir constantly until cool.

Apply once daily for three consecutive days.

Spavin, for Foot.

Green soap.....av.oz. 4
Ammonia water.....fl.oz. 1
Petroleum.....fl.dr. 5
Tincture of cantharides.....fl.dr. 5

Rub daily for one or two days, then omit for two days and repeat the application. Continue this intermittent application until the ointment is all used.

Stomach, for Catarrh of the.

I.

Sodium bicarbonate.....av.oz. 4
Sodium chloride.....av.oz. 4
Sodium sulphate.....av.oz. 4
Juniper berries.....av.oz. 2

Reduce to coarse powder and mix well.

Give one tablespoonful with each meal.

This is employed only in chronic cases.

II.

Artificial Carlsbad salt.....av.oz. 8
Oil cake meal.....av.oz. 8

Two tablespoonfuls are given three times daily in about one and a half gallons of warm water.

This, like the preceding, is used only in chronic cases.

III.

Precipitated chalk.....av.oz. 3
Sodium chloride.....av.oz. 3
Gentian.....av.oz. 1
Fennel.....av.oz. 1

Reduce all to powder and mix well.

One tablespoonful is to be given with each meal.

This mixture is directed against acute cases.

Thrush, for Running.

Wash the hoof daily with soap water, then apply the following:

I.

Chlorinated lime.....av.oz. 1½
Water.....fl.oz. 16

First wash the affected parts with a solution of soap, rinse with clear water, and then wash with a solution of chlorinated lime previously warmed. Then press some oakum, first moistened with the solution, into the opening. Repeat the application once daily.

II.

Alum.....av.oz. 1
Copper sulphate.....av.oz. 1
Carbolic acid.....fl.dr. 1½
Water.....fl.oz. 10

Use like the preceding.

III.

Alum.....av.oz. 1
Copper sulphate.....av.oz. 1
Pyroligneous acid.....fl.oz. 5
Water.....fl.oz. 5

Use like the preceding.

IV.

Salicylic acid.....gr. 120
Glycerin.....fl.oz. 1
Tincture of aloes.....fl.oz. 5
Tincture of galls.....fl.oz. 5

Wash off the hoof with warm soap and water and paint the thrush with the liquid. Then moisten some oakum with the tincture and press it into the crevices between the swellings. Apply once a day.

Urinary Diseases, Remedies for.

Urinary diseases are usually manifested by conditions known as polyuria or the voiding of a large amount of pale urine, and anuria or retention of urine. The former is usually caused by feeding with decomposed fodder.

I. For polyuria:

Camphor, powder.....	av.oz. ½
Ginger.....	av.oz. 1½
Rye flour.....	av.oz. 8
Water.....	sufficient to form a mass

Give one-eighth of this mass mornings and evenings. If the disease still lingers on the fifth day, the following is recommended:

Camphor.....	av.oz. ½
Alum.....	av.oz. 1
Dippel's oil.....	fl.oz. 1
White oak bark.....	av.oz. 1
Angelica root.....	av.oz. 8
Rye flour.....	av.oz. 1½
Water.....	sufficient

Reduce all the drugs to powder and add enough water to form a mass or paste.

Give a piece the size of a hen's egg three times daily spread upon the tongue.

II. For anuria:

Juniper berries, crushed.....	av.oz. 5
Chamomile.....	av.oz. 1

Make an infusion by pouring on 6 pints of hot water, allow to stand 15 minutes, and strain, expressing the residue in the strainer.

Administer one-third of this infusion and use the remainder as an enema.

III. See also Diuretic Remedies.**Worms, Treatment for.**

Poorly-fed animals are more subject to these parasites than well-fed animals. Treatment consists in giving worm medicines and good food.

I.

Oil of tansy.....	fl.dr. 4
Crude petroleum.....	fl.dr. 4
Wormwood, powder.....	av.oz. 3½
Asafetida, powder.....	av.oz. ½
Aloes.....	av.oz. 1
Rye flour.....	av.oz. 2
Water, sufficient to form a mass or paste	

Every two hours a piece of the size of a hen's egg is to be spread upon the tongue.

II.

Tartar emetic.....	av.oz. 9
Asafetida.....	av.oz. 5
Ginger.....	av.oz. 4
American wormseed.....	av.oz. 30
Salt.....	av.oz. 30
Fenugreek.....	av.oz. 16
Mustard.....	av.oz. 16
Poplar bark.....	av.oz. 20
Corn meal.....	av.oz. 20

Two tablespoonfuls are to be given each morning before feeding until four doses have been given.

III.

Tartar emetic.....	av.oz. 1
Aloes.....	av.oz. 2
Ginger.....	av.oz. 2
Potassium nitrate.....	av.oz. 2

Reduce all to powder and mix well.

Give one teaspoonful twice daily in food.

IV.

Crude petroleum (black oil).....	fl.oz. 2
Dippel's oil.....	fl.oz. 2
Levant wormseed, powder.....	av.oz. 10
Valerian.....	av.oz. 5

Reduce the drugs to powder and mix with the other ingredients.

A bolus about the size of a hen's egg should be given every two hours.

SECTION II—CATTLE MEDICINES.

The doses in the following formulas, when not otherwise specified, are intended for a full grown animal; consequently when the medicines are to be administered to young, small or weak animals a corresponding reduction must be made in the size of the dose, while for unusually large and strong cattle the doses may be increased; for young cattle the following will serve as a general guide to the sedative dose required at different ages:

At one year 25 per cent of the adult dose.

At two years 50 per cent of the adult dose.

At three to four years 75 per cent of the adult dose.

Appetite, Loss of, Remedies for**I.**

Gentian, powder.....	av.oz. 1
Magnesium sulphate.....	av.oz. 10

Mix with one quart of warm water and give for one dose.

II.

Sodium sulphate.....	av.oz. 3
Sodium chloride.....	av.oz. 8
Linseed meal.....	av.oz. 1

Mix with one quart of lukewarm water and give for one dose.

III.

Sodium bicarbonate.....	gr. 300
Rhubarb, powder.....	gr. 75

Divide into two doses, and give each dose in a cup of chamomile tea or other suitable vehicle.

Bowels, Remedies for Inflammation of the.

See Remedies for Inflammation of the Stomach and Bowels.

Colic Remedies.

Colic is usually the result of too great indulgence in indigestible food; if not properly attended to may cause death. As a rule, the animal is constipated, is very thirsty, groans, etc. If there is no movement of the bowels within three days, the affection is likely to prove fatal.

Treatment consists in evacuating the bowels by means of purgatives and enemas and subsequently giving stomachic medicines.

- I.
 Green soap.....av.oz. 4
 Sodium chloride.....av.oz. 4
 Linseed oil.....fl.oz. 8
 Water.....fl.oz. 32

Give one injection as above every hour until the bowels act.

- II.
 Magnesium sulphate.....av.oz. 8
 Linseed oil.....fl.oz. 32
 Chamomile infusion (1 to 20) fl.oz. 96

Give one quart every four hours, until all is given, or until the bowels act.

- III.
 Ginger.....gr. 150
 Mustard.....gr. 150
 Gentian.....gr. 150

Reduce all to powder and mix well.

Give one such powder in a pint of warm water when the bowels have acted and the colic has passed off.

Constipation Remedies.

Constipation may result from unsuitable food, but may also be the accompaniment of other diseases.

Treatment consists in giving purgatives and enemas.

- I.
 Antimony sulphide.....gr. 180
 Argols.....av.oz. $\frac{3}{4}$
 Aloes.....av.oz. 1
 Sodium sulphate.....av.oz. 18

All should be in powder and should be well mixed.

One-fourth of this mixture should be administered every 8 hours in warm chamomile tea or other suitable vehicle.

II.

- Aloes.....av.oz. 1
 Linseed meal.....av.oz. 2
 Sodium sulphate.....av.oz. 25

All should be in powder and be well mixed.

Dissolve this powder in one quart hot water and allow to cool somewhat before administering.

III.

- Aloes, powder.....gr. 800
 Linseed oil.....fl.oz. 16

Mix well, warm and administer at one dose.

IV.

- Rochelle salt.....av.oz. 2
 Aloes, powder.....gr. 150
 Linseed meal.....gr. 150

Give this mixture, which is suitable for calves only, at one dose in 8 fluidounces of warm water.

V.

- Green soap.....av.oz. $8\frac{1}{2}$
 Water.....fl.oz. 32

Give as an enema every hour until evacuation of the bowels ensues.

VI.

- Eserine sulphate.....gr. $2\frac{1}{2}$
 Distilled water.....fl.dr. $1\frac{1}{4}$

Mix and dissolve.

This may be injected subcutaneously to produce an evacuation of the bowels.

Diarrhoea, Remedies for.

Diarrhoea may arise from a cold or may be merely an accompaniment of other diseases.

The remedies used are usually efficient, but it is also necessary to cause the animal to perspire by rubbing and then to cover it warmly. It is also essential to put the sick animal in a warm, comfortable and roomy stall.

The food should be restricted to a little dry feed (good hay, etc.), no green food being permissible and in place of cold water, warm, starchy, or mucilaginous water should be given.

I.

- Nutgalls, powder.....av.oz. $1\frac{1}{2}$
 Licorice root, powder.....av.oz. $1\frac{1}{2}$

Give in two doses with an interval of two hours, mixing each dose in a pint of warm water.

II.

Alum, powder.....av.oz. $\frac{1}{2}$
Oak bark (white or red), powder .av.oz. 2

Divide into two doses and administer each dose in one pint of warm water with an interval of four hours between the doses.

III.

Opium, powder.....gr. 150
Peppermint, powder.....av.oz. $\frac{3}{4}$
Linseed meal.....av.oz. 1

Give one-half in the morning, the remainder in the evening, in one pint of warm water.

Diarrhoea in Sucking Calves, Treatment for.

Wrap up the animal warmly and administer internal medicines as below and also use suppositories to avoid irritating the bowels.

I.

Precipitated chalk.....av.oz. $\frac{1}{2}$
Alum, powder.....av.oz. $\frac{1}{2}$
Rye flour.....av.oz. $\frac{3}{4}$
Yolk of eggs.....sufficient

Make into five pills. Give one pill every five hours.

II.

Alum, powdergr. 20
Salicylic acid.....gr. 20
Rye flour.....av.oz. $\frac{3}{4}$
Water.....sufficient

Make this mixture into five pills.

One pill should be given every five hours.

III.

Hydrochloric acid.....fl.dr. $1\frac{1}{4}$
Chamomile infusion (1 to 20)....fl.oz. $3\frac{1}{2}$

In cases of abnormally acid stomach, give the above in two doses with an interval of five hours.

IV.

Tanningr. 15
Mutton tallow.....gr. 45
Cacao butter.....gr. 185

Mix and form into four suppositories; insert one morning and evening after a passage of the bowels, inserting it as far up as can be done with the oiled finger.

Eye, Remedies for Inflammation of.

Inflammation of the eye is usually of a catarrhal character caused by the catching of "cold." The eye first appears reddened, then tears begin to flow, and a mucous sub-

stance appears which has a tendency to stick the eyelids together.

Treatment consists in washing with warm milk and applying this solution every hour:

Solution of lead subacetate.....fl.dr. 3
Distilled water enough to make...fl.oz. 8

Fever Medicines.

I.

Potassium nitrate.....av.oz. $\frac{3}{4}$
Sodium sulphate.....av.oz. 8

Give one-half of the above in one quart of warm bran water at night.

II.

Salicylic acid.....av.oz. $\frac{3}{4}$
Sodium bicarbonate.....av.oz. $\frac{1}{2}$
Magnesium sulphate.....av.oz. 10

Use like the preceding.

Indigestion Remedies.

The treatment for indigestion is the same as for catarrh of the stomach; hence see Treatment for Catarrh of the Stomach.

Jaundice, Treatment for.

Jaundice may emanate from the liver or may result from intestinal catarrh. As in the human subject, it is manifested by yellow discoloration of the mucous membrane of the mouth, of the white of the eye, etc. The urine becomes dark and the feces light colored; the appetite is diminished.

Treatment consists in giving calomel and sodium sulphate and applying irritant ointments in the region of the liver. If no benefit results from this treatment, then the sodium sulphate should be given with aloes, rhubarb and juniper berries.

I.

Sodium bicarbonate.....av.oz. $1\frac{1}{4}$
Sodium sulphate.....av.oz. 10
Juniper berries, crushed.....av.oz. $1\frac{1}{4}$
Water.....fl.oz. 64

Give half of the above morning and evening.

II.

Aloesav.oz. .5
Rhubarbav.oz. 5
Argols (crude tartar).....av.oz. 10
Calamus.....av.oz. 10
Sodium sulphate.....av.oz. 10

Reduce all to powder and mix well.

Give one heaping tablespoonful in a quart of infusion of juniper berries three times a day.

Lice, Treatment for.

Lice are most apt to trouble young animals, only troubling old ones when they are very dirty.

I.

Green soap.....	av.oz. 10
Alcohol.....	fl.oz. 9
Wood alcohol.....	fl.oz. 1
Crude naphthalin.....	av.oz. 2
Water.....	fl.oz. 40

Heat the whole together until dissolved and then stir until cold.

Rub the places infested by lice thoroughly with the above, and wash off the next day with warm soda solution. When the animal is again dry repeat this operation twice. The lice generally die after the second application.

II.

Raw tobacco (not manufactured).....	av.oz. 5
Alcohol.....	fl.oz. 10
Water, hot.....	fl.oz. 60

Pour the boiling water on the tobacco, allow to stand half an hour, strain and add the alcohol.

Moisten the parts infested with lice, and wash off on the following day with warm soda solution. Repeat the operation three or four times as may be necessary.

Milk Secretion, Treatment for Diminished.

When diminished milk secretion is not due to age or to disease, the following mixtures will prove useful. They have been dispensed under such names as "Cow Powder," "Milk Powder," and "Pulvis Vaccarum."

I.

Caraway.....	av.oz. 4
Calamus.....	av.oz. 4
Sodium chloride.....	av.oz. 2
Sulphur.....	av.oz. 1

Reduce all to powder and mix well.

Give two heaping tablespoonfuls twice daily in one quart of warm beer.

II.

Anise.....	av.oz. 2
Fennel.....	av.oz. 2
Antimony sulphide.....	av.oz. 4
Sodium chloride.....	av.oz. 4

All should be in powder and well mixed.

This mixture should be used like the preceding.

III.

Black antimony.....	av.oz. 2
Sulphur.....	av.oz. 2
Fennel.....	av.oz. 1
Caraway.....	av.oz. 1
Juniper berries.....	av.oz. 1
Sodium chloride.....	av.oz. 10

All should be in powder and well mixed.

This mixture should be used like the preceding.

IV.

Potassium nitrate.....	av.oz. 1
Alum.....	av.oz. 1
Sulphur.....	av.oz. 1
Prepared chalk.....	av.oz. 1
Anise.....	av.oz. 10
Fennel.....	av.oz. 5
Buckbean herb.....	av.oz. 5
Sodium chloride.....	av.oz. 10

All should be in powder and should be well mixed.

Give one or two handfuls with the morning meal.—H.

Milk, Treatment for Speedy Souring of.

There are conditions of cows when the milk soon becomes sour, in spite of the utmost cleanliness. The following mixture may remove the difficulty:

I.

Sodium bicarbonate.....	av.oz. 3½
Precipitated chalk.....	av.oz. 8½
Fennel.....	av.oz. 7
Linseed meal.....	av.oz. 7

All should be in powder and should be well mixed.

Give one-half in one quart of warm water, administering the remainder the next day.

II.

Fennel.....	av.oz. 4
Linseed meal.....	av.oz. 4
Sodium chloride.....	av.oz. 4
Prepared chalk.....	av.oz. 8

All should be in powder and should be well mixed.

Two heaping tablespoonfuls should be given twice daily in one pint of warm water.

This mixture should be employed in obstinate cases.

Ringworm, Treatment for

See Treatment for Tetters.

Rheumatism Remedies.**I.**

Ammonium chloride.....av.oz. 2
 Potassium nitrate.....av.oz. 2
 Sodium sulphate.....av.oz. 12

Reduce to powder, mix, and divide into four portions.

This is used as a purgative, one powder being given every three hours in a quart of warm water.

II.

When there is fever, sodium salicylate in about 1-ounce doses may be administered every three hours in a pint of warm water.

III.

When there is no fever the following may be recommended:

Arnica flowers.....av.oz. 3½
 Juniper berries, crushed.....av.oz. 3½
 Ammonium chloride.....av.oz. 1
 Aloes.....av.oz. 1
 Water, boiling.....pints 7

Pour the water upon the arnica and juniper, let stand one-half hour, strain, and in the colature dissolve the remaining ingredients.

Warm one quart of this mixture and give every five hours.

IV.

Oil of turpentine.....fl.dr. 6
 Spirit of camphor.....fl.oz. 6

This mixture should be applied to the swollen joints every 6 hours.

Shoulder Lameness, Treatment for.

Water of ammonia.....fl.oz. 5
 Oil of turpentine.....fl.oz. 5
 Spirit of camphor.....fl.oz. 10
 Spirit of soap.....fl.oz. 10

Rub well into the lame shoulder three times daily.

Stomach, Treatment for Catarrh of the.

Catarrh of the stomach is generally produced by irregular feeding or indigestible food, without taking sufficient exercise, or from eating large quantities of non-nutritious food.

The treatment consists in the administration of mild laxatives combined with bitter tonics, and of hydrochloric acid.

During the illness the animal should be

fed only with easily digestible food, such as flour or bran water.

I.

Antimony sulphide.....gr. 300
 Argols (crude tartar).....av.oz. 1¼
 Wormwood.....av.oz. 2
 Sodium sulphate.....av.oz. 15

Give one-fourth of the whole every four hours in a quart of warm water.

II.

Aloes, powder.....av.oz. 1
 Sodium chloride.....av.oz. 3
 Linseed meal.....av.oz. 4

Give one-half in the morning and the other half at night, dissolved in one pint of warm water.

III.

Hydrochloric acid.....fl.dr. 4
 Linseed meal.....av.oz. 3
 Water.....av.oz. 83½

Give one-half at night and the remainder in the morning.

This is employed in obstinate cases.

IV.

Aloes, powder.....gr. 300
 Calamus, powder.....av.oz. 1¼
 Argols (crude tartar).....gr. 300
 Antimony sulphide, powder.....gr. 150
 Linseed meal.....av.oz. 2
 Water.....fl.oz. 32

Give one-half at night and the remainder in the morning, first warming the mixture.

This is employed in chronic indigestion.

V.

Calamus.....av.oz. 1
 Linseed meal.....av.oz. 1
 Antimony sulphide.....av.oz. ½
 Water.....fl.oz. 32

Give two-thirds of the mixture, first warming it, administering the remainder after an interval of four hours.

This is also employed in obstinate cases.

Stomach and Bowels, Remedies for Inflammation of the.

It is generally presumed that inflammation of the stomach and bowels is the result either of a cold or of eating some poisonous weed.

The affection is manifested by loss of both appetite and thirst, restlessness, swollen abdomen, constipation, etc.

Warm mashes should be given as food and warm linseed meal water be given in place of cold water to drink. Purgatives containing

oil should be given, also enemas, and the belly should be rubbed with stimulant applications.

The following may also be administered:

I.

Infusion of chamomile (1 in 10). fl. oz. 32
Sodium sulphate. av. oz. 10
Linseed oil fl. oz. 26
Salicylic acid. gr. 90

Administer one pint every hour until constipation is overcome.

II.

Infusion of chamomile. fl. oz. 32
Linseed meal. av. oz. 7
Linseed oil. fl. oz. 32

Give one pint every 2 hours after the bowels have acted.

III.

Solution of soap. fl. oz. 32
Common salt. av. oz. 1½
Linseed oil. fl. oz. 8

Give this mixture as an injection every hour until the bowels are relieved.

IV.

Linseed oil. fl. oz. 4
Ammonia water. fl. oz. 4
Oil of turpentine. fl. oz. 4

Rub the belly with the above every 3 hours.

Tetter or Ringworm, Treatment for.

Tetter usually attacks old, underfed animals, where stalls are poorly ventilated and unclean.

The stalls must first of all be thoroughly cleaned, aired and whitewashed with lime, and the affected parts of the animal treated with the following:

Green soap. av. oz. 10
Water fl. oz. 10
Pine tar. av. oz. 5

Heat in a water bath until of a uniform consistency.

Wash the entire body of the animal every 2 days with warm soft or green soap solution (1 to 20), rinse with warm water and when the animal is dry rub the above ointment well in under the hair.

Throat, Inflammation of.

I.

Ammonia liniment. fl. oz. 8
Oil of turpentine. fl. oz. 8

Rub the throat three times daily with this mixture and then bind with flannel.

II.

Alum. gr. 375
Salicylic acid. gr. 24
Honey av. oz. 1
Diluted acetic acid. fl. oz. 2
Water. fl. oz. 32

Mix and dissolve.

Warm the solution and inject into the mouth every half hour. Or a linen cloth moistened with this solution may be employed to wash out the mouth.

Udder, Treatment for Inflammation of.

Inflamed udder may result from injury or from cold, or as a result of other diseases. In the first stages, the milk appears normal, subsequently becoming thick and even purulent or bloody.

Treatment consists in gently evacuating the udder mornings and evenings, and limiting the animal to half rations, which should consist of easily digestible food. The udder should be bathed in warm water after milking, and after drying an antiseptic application should be made. If the udder is hot and feverish, the application should contain mercurial ointment. Saline purgatives should be administered internally.

I.

Salicylic acid. gr. 60
Camphorated oil. fl. oz. 4
Rubber the udder carefully twice daily.

II.

Salicylic acid. gr. 40
Mercurial ointment av. oz. 1
Liniment of camphor. fl. oz. 3¼
Apply like the preceding.

III.

Potassium nitrate. av. oz. 2
Sodium sulphate. av. oz. 20

Give one-third of the above at morning, at noon and at night in one quart of chamomile infusion or other suitable vehicle.

Urine, Treatment for Bloody.

This is generally brought about by eating sour food such as oxalis, either fresh or dried, which is generally the cause to be looked for.

Treatment consists in changing the food. If the disease has been contracted while grazing, change to hay food, or if it has been contracted from dry, place the animal at pas-

ture or give it green food. If the change of food alone proves insufficient then use the following:

White lead.....	gr. 45
Sodium acetate.....	gr. 150
Camphor, powder.....	gr. 180
Precipitated chalk.....	av.oz. 4

Mix and divide into 6 powders.

Give one powder in a quart of bran mash morning and evening.

Worms, Treatment for.

Worms are readily produced by insufficient feeding, and are banished by purgative worm medicines. The important point is to give the animal but little food on the day previous, and to administer the worm medicine and the purgative at the same time.

Wormwood, powder.....	av.oz. 1
Tansy, powder.....	av.oz. 1
Aloes, powder.....	av.oz. 1
Dippel's oil.....	fl.dr. 4
Linseed oil.....	fl.oz. 17

Give in two doses, with an interval of five hours.

SECTION III—SHEEP MEDICINES.

Sheep-Dips.

Carbolic Acid Dip.

Soap.....	av.lb. 1
Crude carbolic acid.....	fl.oz. 16
Water.....	gal. 50

Dissolve the soap in a gallon or more of boiling water, add the acid and stir thoroughly. Keep the mixture well thinned, and do not let it get into the mouth, nostrils or eyes of the sheep. Hold each sheep in the bath not less than half a minute.

Kerosene Emulsion Dip.

Fresh skimmed milk.....	gal. 1
Kerosene.....	gal. 2

Churn together till emulsified, or mix and put into the mixture a force pump and direct the stream from the pump back into the mixture. The emulsification will take place more rapidly if the milk be added while boiling hot. Use 1 gallon of this emulsion to each 10 gallons of water required.

Kerosene Soap Dip.

Soap.....	av.oz. 16
Water.....	gal. 1
Kerosene.....	gal. 2

Bring the water to a boil and dissolve the soap in it; then add the kerosene and churn until emulsified. Use 1 gallon of this emulsion to 8 of water.

The above are rather prophylactic in their character and are used generally after shearing.

One of the most dangerous of the parasitic diseases of sheep is scab, which may be treated either by rubbing poisonous ointments into the fleece by the hand or by immersing the sheep in aqueous mixtures containing some ingredient which will kill the parasites. When any of the flock are infected, all should be dipped, preferably being first sheared if the season permits it.

Instead of treating the scab by one application, some authorities advise the use of a preliminary dip of alkaline water to soften the scabs, or of oil or glycerin well rubbed in for the same purpose. This is to be followed in two or three days by a poisonous dip. Nearly all advise that the scabs be rubbed with a stiff brush while the sheep is being dipped.

The quantity of dip required for each sheep is variously estimated at from 1 quart to 1 gallon. For small numbers of sheep, say 50 to 100, the larger amount is necessary, while for large flocks, 1 quart for shorn or 2 quarts for unshorn sheep may be allowed. The dip should be kept while in use at a temperature of from 100 to 110 degs. F. The sheep should be dipped again within some 6 or 10 days of the first dipping in order to kill before their maturity any parasites which may have developed from eggs which were left upon the animal at the time of the first treatment, as the dip does not destroy the vitality of the eggs.

The chief poisons used in the dip are tobacco, arsenic and carbolic acid. Of these, tobacco is the favorite, because its use has not been followed by the fatality that has in times past followed the use of arsenic. Carbolic acid is too expensive to be used in large quantities, but is an excellent ingredient when only a few sheep are to be treated. The addition of tar to the dips serves a good purpose, as it is not only healing, but serves an excellent purpose in driving away flies.

Texas Tobacco Dip.

Tobacco	av.lbs. 80
Sulphur	av.lbs. 7
Concentrated lye.....	av.lbs. 8
Water.....	gal. 100

Steep the tobacco in three successive portions of water, expressing each time; then add the other ingredients to the liquor, and stir well while in use.

Law's Sheep Dip.

Tobacco.....	av.lbs. 16
Oil of tar.....	fl.oz. 48
Soda ash or caustic soda.....	av.lbs. 20
Soft soap.....	av.lbs. 4
Water.....	gal. 50

Steep the tobacco as in the previous formula, and add the other ingredients to the liquor.

Zundel's Carbolic Dip.

Crude carbolic acid.....	av.lbs. 8
Caustic lime.....	av.lbs. 2
Potash or lye.....	av.lbs. 6
Soft soap.....	av.lbs. 6
Water.....	gal. 70

Mix and boil.

Dr. Kaiser's Carbolic Dip.

Tobacco.....	av.lbs. 18½
Soda ash or caustic soda.....	av.lbs. 8
Freshly slaked lime.....	av.lbs. 4
Soft soap.....	av.lbs. 8
Crude carbolic acid.....	av.lbs. 4
Water.....	gal. 66

Infuse the tobacco in the water, strain, and to the infusion add the remaining ingredients.

The following arsenical preparations are in favor in England:

Arsenical Sheep-Dip Paste (Finlay Dunn).

Arsenic.....	av.lbs. 2
Pearl ash.....	av.lbs. 2
Soft soap.....	av.lbs. 2
Sulphur.....	av.lbs. 2

This is sufficient for 125 gallons of water.

Arsenical Sheep-Dip Paste (Prof. Simonds).

Arsenic.....	av.lb. 1
Soft soap.....	av.lb. 1
Potassium carbonate.....	av.oz. 8
Water.....	gal. 4

Boil the arsenic and potash together in half the water, and dissolve the soap in the other half. This is sufficient for 20 sheep. It should be used warm.

Colic Remedies.

Colic in sheep may result from exposure to

cold, from constipation, from overfeeding, or from worms.

Treatment consists in making stimulant applications to the body, and giving purgatives and enemas.

I.

Capsicum.....	gr. 30
Ginger.....	gr. 120
Peppermint.....	gr. 150
Linseed meal.....	gr. 150
Sodium sulphate.....	av.oz. 2

Reduce all to powder, mix well, and divide into four portions.

Give one powder every hour in a cupful of warm coffee or warm beer.

This mixture is useful in the treatment of colic resulting from cold.

II.

Castile soap.....	gr. 60
Fennel.....	gr. 120
Linseed meal.....	gr. 120
Chamomile.....	gr. 120
Sodium sulphate.....	av.oz. 8

Reduce all to powder, mix well, and divide into four portions.

Every 2 hours, mix one powder with a cupful of warm water, add a tablespoonful of linseed oil, and give the mixture to the animal.

This preparation is advised when the colic is the result of overfeeding.

III.

Soap, castile.....	gr. 75
Sodium chloride.....	av.oz. 1½

Mix and divide into 5 powders.

One powder is to be mixed with 8 fluidounces of infusion of chamomile and used as an enema, which is to be repeated every hour.

Constipation Remedies.

Constipation of the sheep may result from difficultly digestible food, and may also result from a sudden change of food.

Treatment consists in giving sodium sulphate internally as well as enemas.

I.

Caraway.....	gr. 150
Sodium bicarbonate.....	gr. 150
Linseed meal.....	gr. 800
Sodium sulphate.....	av.oz. 2½

Mix all in powder form and divide into three portions.

Stir one into 8 fluidounces of warm water,

add about one-half cupful of linseed oil, and give at one dose; repeat every 3 hours.

II.

Soap, powder gr. 75
Rye flour av. oz. 1½

Mix and divide into 5 portions.

Stir one powder in 8 fluidounces of warm water and give as an enema every hour.

Diarrhoea Remedies.

Diarrhoea affects old as well as young animals and may be caused by exposure to cold, by changing from dry to green food, or by feeding with decomposed food.

I.

White or red oak bark av. oz. 1
Juniper berries av. oz. ½
Ginger gr. 120
Wormwood gr. 120
Sodium chloride av. oz. 5

All should be in powder and be well mixed.

One tablespoonful should be given three times daily in food.

This is best adapted to older animals.

II.

Rhubarb av. oz. 1
Prepared chalk av. oz. 1
Tannic acid gr. 45
Calamus av. oz. 3
Rye flour av. oz. 1

All should be in powder, be well mixed, and be converted into an electuary by the addition of mucilage or syrup.

A piece the size of a hazel-nut should be given mornings and evenings.

This is best adapted to lambs.

Eyes, Inflammation of the.

The eye should be protected from bright light and should be bathed twice daily; then the eye waters mentioned below may be used. It is also advisable to administer mild cathartics.

I.

Tincture of opium drops 40
Lead water fl. oz. 8
Bathe the eye twice daily.

II.

Zinc sulphate gr. 20
Mucilage of quince seed fl. oz. 4
Distilled water fl. oz. 4
Mix and dissolve.
Use like the preceding.

III.

Zinc sulphate gr. 20
Infusion of chamomile (1 in 20) fl. oz. 8

Mix and dissolve.

Use like the preceding.

Rheumatism Remedies.

Treatment consists in bathing, giving purgatives, and applying stimulant liniments to the limbs.

I.

Rosemary herb, cut av. oz. 3½
Soda ash av. oz. 16
Sodium chloride av. oz. 64

Mix the above with 12 gallons of hot water, allow to stand for 15 minutes, and use for bathing. The liquid may be used 2 or 3 times for a bath if warmed each time.

II.

Oil of turpentine fl. dr. 4
Water of ammonia fl. dr. 4
Spirit of soap fl. oz. 7½
Spirit of camphor fl. oz. 7½
Rub the legs with this mixture twice daily.

III.

Sodium sulphate av. oz. 1½
Aloes gr. 80
Linseed oil fl. dr. 5
Infusion of linseed (1 in 20) fl. oz. 7
Mix and dissolve.

Give one-half at a dose and repeat in 3 hours.

This mixture is intended for full-grown animals.

IV.

Sodium salicylate gr. 60
Aloes gr. 360
Infusion of linseed (1 in 20) fl. oz. 15
Mix and dissolve.

Give a teaspoonful 2 or 3 times daily according to the age of the animal.

This mixture is recommended for lambs.

Urine, Treatment for Retention of.

Hemp seed av. oz. 2
Magnesium sulphate av. oz. 1
Bitter almonds gr. 90
Juniper berries av. oz. ½
Rye flour av. oz. ½

Reduce all to powder, mix and make an electuary by the addition of water or syrup.

A piece the size of a marble may be given once daily.

Urine, Treatment for Bloody.

The animals should be placed in a warm stall and fed with wholesome dry food. The following may also be given:

Lead carbonate.....	av.oz.	½
Camphor.....	av.oz.	½
Bitter almond.....	av.oz.	1
Linseed meal.....	av.oz.	3
Rye flour.....	av.oz.	5

All should be reduced to powder and be made into a stiff mass with syrup or molasses.

A piece of the size of a hazelnut should be administered once daily.

Worm, Remedy for Tape.

Aloes.....	gr.	150
Oleoresin of male fern.....	gr.	30
Naphthalin.....	gr.	3

Make into a mass with spirit of soap and divide into 2 pills.

The dose for a lamb, 4 to 8 months, is 1 pill given in the morning without giving food; the other pill should be given 8 days thereafter. The dose for lambs only is given, as full-grown animals are rarely affected.

SECTION IV—SWINE MEDICINES.**Appetite, Treatment for Loss of.**

Loss of appetite may be indicative of other diseases, but may also be the result of over-feeding or due to the presence of undigested food.

Treatment consists in changing the food, giving an emetic, and subsequently the powder mentioned below.

I.

Tartar emetic.....	gr.	15
Ipecac, powder.....	gr.	45
Althæa root.....	gr.	75

Mix and make into an electuary by means of syrup, molasses or mucilage.

Give at one dose as an emetic.

II.

Calamus.....	av.oz.	1
Gentian.....	av.oz.	1
Antimony sulphide.....	av.oz.	1
Sodium bicarbonate.....	av.oz.	5
Sodium chloride.....	av.oz.	5
Sodium sulphate.....	av.oz.	5

Mix all and reduce to powder.

Give a tablespoonful twice daily.

Catarrh Remedies.**I.**

Ammonium chloride.....	gr.	150
Antimony sulphide.....	gr.	150
Argols (crude tartar).....	gr.	300
Licorice root.....	av.oz.	1½
Linseed meal.....	av.oz.	1½

Mix in powder and add syrup or glucose to form an electuary.

Three times daily give a piece about the size of a walnut.

II.

Potassium nitrate.....	gr.	150
Sodium sulphate.....	av.oz.	2½
Linseed meal.....	av.oz.	¾

Mix in powder and add syrup or glucose to form an electuary.

Give a tablespoonful every 2 hours.

Colic Remedies.

Colic may result from eating difficultly digestible food or poisonous plants, from exposure to cold, or from worms.

Treatment consists in keeping the animal in a warm stall, administering aromatic, stimulating, and purgative remedies, and giving enemas.

I.

Sodium sulphate.....	av.oz.	1½
Peppermint.....	av.oz.	½
Sodium chloride.....	gr.	150

Reduce all to powder and mix well.

Give one-half of this mixture in 8 fluid-ounces of weak coffee and repeat the dose in 8 hours.

II.

Chamomile.....	av.oz.	½
Peppermint.....	av.oz.	½
Green soap.....	av.oz.	2½
Linseed oil.....	fl.oz.	2½
Water, boiling.....	fl.oz.	50

Pour the water upon the chamomile and peppermint, let stand for 15 minutes, strain, and add to the colature the remaining ingredients.

Inject 8 fluidounces of this mixture, previously warmed, into the rectum every half hour.

Diarrhoea Remedies.

Diarrhoea may result from exposure to cold or from disorders of digestion. If it continues more than 24 hours, treatment is urgently demanded, as it may cause a severer disease.

The animal should be kept warm, and astringent and aromatic remedies may be given, and possibly suppositories may be required.

I.

Chamomile.....gr. 150
Peppermint, cut.....gr. 150
White or red oak barkgr. 300
Tannic acid.....gr. 30

Pour on this mixture 16 fluidounces of boiling water and give one-fourth of the infusion every 2 hours.

II.

Ferrous sulphate.....gr. 40
Alumgr. 40
Acaciagr. 375
Sugar of milk.....gr. 300

Mix all in powder and divide into 5 parts. Give one powder in a cupful of warm chamomile tea or other suitable vehicle every 3 hours.

III.

Rhubarb.....gr. 15
Calcium carbonate.....gr. 150

Mix in powder and divide into 10 portions. One portion is to be given twice daily in a tablespoonful of warm chamomile tea or other suitable vehicle. This remedy is intended for sucking pigs.

IV.

Tannic acid.....gr. 8
Cacao butter.....gr. 300

Mix and divide into 5 suppositories. After each movement of the bowels, insert one suppository, pushing it as far up into the rectum as possible with the well-oiled finger.

Eye, Remedies for Inflammation of the.

Wash the eye 3 times daily with lukewarm water and use the following eye waters:

I.

Zinc sulphate.....gr. 36
Tincture of opium.....fl.dr. 1½
Infusion of chamomile (1 in 50).fl.oz. 16

II.

Ammonium chloride.....gr. 72
Lead water.....fl.oz. 16

Hog Cholera Remedies.

Hog cholera, swine fever, or swine plague are the names applied to a group of symptoms produced by three distinct types of disease,

namely, charbon, contagious pneumo-enteritis and epizootic catarrh, all, however, dependent upon recognized specific germs. The second form, pneumo-enteritis, probably is the one most commonly understood, and it is characterized by an inflamed, ulcerated condition of the alimentary tract, and fetid, bloody discharges—these having determined the popular designation of "cholera."

Prophylaxis consists in keeping the animal in perfect health by insuring proper hygienic food and surroundings. One of the principal, if not the main, cause of the disease is excessive feeding of corn. Corn-fattened animals are not in a physiological condition, as is well understood, and corn, principally consisting of starch, being particularly prone to fermentation, naturally must favor development of fermentative diseases in debilitated organisms. Hence corn should largely be replaced by the grains, bran, peas, beans and other nitrogenous foods, which will produce more muscle and less unhealthy fat. Decaying and fermenting food should not be offered under any condition. Clean, ventilated stalls that will afford protection against inclement weather, but also plenty of exercise in the open air, are prerequisites.

Prophylactic treatment consists in the daily administration of wood or animal charcoal or iron sulphate. Potassium chlorate is also recommended. In fact, experience teaches that the two latter agents are the only ones which proved effective for this purpose or in treating the initial stages of the disturbance. A few formulas are appended.

I.

Arsenic.....av.oz. 1
Antimony sulphide.....av.oz. 4
Potassium nitrate.....av.oz. 4
Ferrous sulphate.....av.oz. 16
Sulphur.....av.oz. 16
Madder.....av.oz. 16

Mix with 12 gallons of slop, and give 1 pint to each hog, the whole being for fifty.

II.

Capsicum.....av.lb. 1
Ferrous sulphate.....av.lb. 2
Madder.....av.lb. 2
Calcium phosphate.....av.lb. 5
Wood-ashes, sifted.....av.lb. 10

This may be administered in the same quantity as the foregoing.

As soon as an animal develops symptoms of the plague it must be isolated from the herd and surrounded by absolutely antiseptic conditions. Constipation, if present, should be relieved by castor oil or rhubarb. The bowels should be frequently irrigated with warm water; one of the aforementioned prescriptions should be administered; the food should be restricted to well-cooked oat or barley meal gruel, or, if this is not borne, boiled corn starch. Some advise putting a trace of sulphuric acid into the drinking water. For the fever potassium nitrate usually is resorted to. In the convalescent stages tonics must be administered.

When the disease is fully developed there is little hope, and the animal should be killed and buried with quicklime. In England swine fever comes under the contagious diseases act, and treatment is not permitted. The public health authorities must be advised, who destroy the infected animal.

III.

Iron carbonate.....	av.oz. 5
Sodium chloride.....	av.oz. 5
Potassium carbonate.....	av.oz. 5
Sulphur.....	av.oz. 5
Lime.....	av.oz. 5
Magnesium carbonate.....	av.oz. 10
Soap.....	av.oz. 10
Carbolic acid.....	fl.oz. 5

Mix well and reduce to powder.

One-fourth av. ounce should be given at each meal, mixed with the food.

IV.

Wood charcoal.....	av.oz. 4
Sulphur.....	av.oz. 4
Sodium sulphate.....	av.oz. 4
Antimony sulphide.....	av.oz. 4
Sodium chloride.....	av.oz. 8
Sodium bicarbonate.....	av.oz. 8
Sodium hyposulphite.....	av.oz. 8

Reduce all to powder and mix well.

A large tablespoonful for each 200 pounds of animal should be given once daily with food.

V.

Calcium phosphate.....	av.oz. 16
Chalk.....	av.oz. 12
Magnesium carbonate.....	av.oz. 4
Capsicum.....	av.oz. 1

Reduce all to powder and mix well.

Give one tablespoonful three times daily with food.

VI.

Iron carbonate.....	av.oz. 5
Potassium carbonate.....	av.oz. 2
Sodium chloride.....	av.oz. 4
Sulphur.....	av.oz. 4
Magnesium carbonate.....	av.oz. 4
Wood charcoal.....	av.oz. 4
Soap.....	av.oz. 2
Carbolic acid.....	av.oz. 2
Chalk.....	av.oz. 50

Reduce all to powder and mix well.

One-half to 1 av.ounce should be given with each meal.

VII.

Sodium bicarbonate.....	av.oz. 4
Gentian.....	av.oz. 4
Ginger.....	av.oz. 6
Potassium nitrate.....	av.oz. 2
Chalk.....	av.oz. 16

Reduce all to powder and mix well.

Use like the preceding.

Swine Fever Remedies.

This disease, which is exceedingly contagious and prevalent in many localities, is indicated by an increase in the temperature of the hog from 37 degs. C., the normal temperature in health, to 40 degs. C., sometimes rising as high as 41 degs. C. The other symptoms are highly colored urine, cold extremities, loss of appetite, and constipation.

The following treatment is recommended:

A cathartic and diuretic should first be given, consisting of:

Potassium nitrate.....	av.oz. $\frac{3}{4}$
Sulphur.....	av.oz. $1\frac{1}{2}$
Magnesium sulphate.....	av.oz. 5
Molasses.....	av.oz. 2
Water, enough to make.....	fl.oz. 20

Mix the sulphur with the molasses, then add the water gradually, in which the salts have previously been dissolved.

Shake the mixture, and give 1 ounce every morning until relieved. This is the dose for hogs of average size; for larger animals the dose should be increased.

For diarrhoea and weakness usually resulting from subsidence of the fever, the following mixture is administered:

Sodium bicarbonate.....	av.oz. 4
Gentian.....	av.oz. 4
Catechu.....	av.oz. 4
Cinchona.....	av.oz. 4

Reduce all to powder and mix well.

From one-fourth to 1 av.ounce of this pow-

der should be given in food. Condition powders should be administered.

In diarrhoea accompanied with an irritable or relaxed condition, the following is recommended:

Opium.....	gr. 60
Nutgall.....	gr. 120
Pimento.....	gr. 120
Sodium bicarbonate.....	gr. 120

Reduce all to powder and mix well.

The dose is from 30 to 120 grains made into a bolus with molasses.

Vomiting, Remedy for.

Prepared chalk.....	gr. 75
Sodium bicarbonate.....	gr. 150
Sodium chloride.....	gr. 150
Sodium sulphate.....	gr. 150
Linseed meal.....	av.oz. 1½

Mix all in powder and divide into 5 parts.

Give 1 part every 3 hours in a cupful of warm chamomile tea or other suitable vehicle.

Worm Medicine.

Sodium sulphate, powder....	av.oz. 2
Tansy, powder.....	gr. 300
Castor oil.....	fl.dr. 6
Naphthalin.....	gr. 30
Rye flour.....	av.oz. ¼

Mix all and add syrup, glucose or molasses to form an electuary.

Give one-fourth of this mixture every 2 hours.

SECTION V—DOG AND CAT MEDICINES.

The doses and quantities mentioned in the succeeding formulas are intended for dogs of medium weight—about 50 pounds. Larger animals will require proportionately larger doses and smaller ones smaller doses.

Many of the following remedies are adapted for ailments of cats, the dose being somewhat less than for dogs. Pills and liquids are the best forms of medicines to administer to dogs, while powders and liquids are more suitable for cats.

In giving medicines to dogs, open the mouth of the animal and place in it crosswise a small stick of wood, then thrust the pill, capsule or bolus down the throat with the finger; if a liquid, insert the neck of the bottle on the side of the mouth and hold the head back so as to compel the dog to swallow.

When administering to cats, the powder is best blown through a glass or rubber tube onto the roof of the mouth; the liquid medicine is best poured upon the front paws, which the animal will lick off to clean them.

Appetite, Remedies for Loss of.

Dogs are liable to overeating, and this may result in loss of appetite. Treatment consists in giving an emetic and following this with a purgative and stomachic mixture.

I.

Tartar emetic.....	gr. ½
White hellebore.....	gr. 2

Give this powder at one dose.

II.

Sodium sulphate, dried.....	gr. 90
Sodium bicarbonate.....	gr. 30
Rhubarb.....	gr. 30
Calamus.....	gr. 90

Mix all in powder, make into a mass, and divide into 6 pills.

One pill should be given twice daily.

Canker of the Ear, Treatment for.

To effect a cure, treatment must be begun in the early stages of the disease. During treatment, the animal must be prevented from scratching the ear.

I.

Copper sulphate.....	gr. 36
Alum.....	gr. 36
Water.....	fl.oz. 4

Mix and dissolve.

Wash the ear out 3 times daily with this liquid by means of a soft sponge.

II.

Lead acetate.....	gr. 36
Copper acetate.....	gr. 36
Glycerin.....	fl.dr. 4
Distilled water.....	fl.oz. 3½

Mix and dissolve.

Use like the preceding.

III.

Silver nitrate.....	gr. 18
Distilled water.....	fl.oz. 2

Wash the diseased portions of the ear with this liquid 3 times daily.

IV.

Tannic acid.....	gr. 60
Bismuth subnitrate.....	gr. 60
Simple cerate.....	av.oz. 1

Apoint the diseased portions of the ear once daily.

V.

Ointment of red oxide of mercury av.oz. $\frac{1}{2}$
Simple cerate.....av.oz. $\frac{1}{2}$

Use like the preceding.

Constipation Remedies.

Constipation may result from lack of exercise and may also be caused by eating indigestible food, bones for example.

Treatment consists in giving an enema containing soap, and purgatives internally.

I.

Green soap.....gr. 150
Linseed oil.....fl.oz. $1\frac{1}{2}$
Water.....fl.oz. 15

Give one-fifth of this as an enema every half hour, until copious evacuation occurs.

II.

Calomel.....gr. $1\frac{1}{8}$
Sugar.....gr. 15

Give at one dose.

III.

Aloes.....gr. 40
Acacia.....gr. 120
Castor oil.....fl.dr. 4
Water.....fl.oz. 5

Mix and make an emulsion.

Give at one dose.

IV.

Syrup of buckthorn.....fl.oz. 1

Give at one dose.

Cough Medicines.

I.

Sodium bromide.....gr. 180
Creosote water.....fl.oz. 2
Fennel water.....fl.oz. 4

Mix and dissolve.

Give one-half tablespoonful 4 times daily.

II.

Tincture of belladonna.....fl.dr. 4
Syrup of squill.....fl.dr. 4
Paregoric.....fl.oz. 1
Water, enough to make.....fl.oz. 6

Give one teaspoonful 3 times a day.

III.

Morphine sulphate.....gr. 2
Bitter almond water.....fl.oz. 1
Creosote water.....fl.oz. 1

Mix and dissolve.

Give 20 drops in a little water 3 times daily.

IV.

Yellow sulphide of antimony.....gr. 10
Ammonium chloride.....gr. 36
Purified extract of licorice.....fl.dr. 4
Syrup of althæa.....fl.oz. $3\frac{1}{2}$

Give one tablespoonful every 2 hours.

V.

Ammonium bromide.....gr. 180
Fennel water.....fl.oz. 4
Syrup of licorice.....fl.oz. 4

Give one teaspoonful 4 times daily.

Distemper Medicines.

I.

Antimonial powder.....gr. $2\frac{1}{2}$
Mercury with chalk.....gr. 2
Dover's powder.....gr. 3
Quinine sulphate.....gr. $1\frac{1}{2}$
Extract of nuxvomica.....gr. $\frac{1}{4}$

Make into one pill.

Give one such pill 2 or 3 times a week.

II.

Potassium nitrate.....av.oz. 4
Sulphur.....av.oz. 4
Charcoal.....gr. 40
Black antimony.....gr. 40

Reduce all to powder and mix well.

Make about 30 grains into a ball with lard or butter, and give one such ball in the morning and evening.

Diarrhoea Remedies.

Decomposed or very fatty food, overeating, drinking of too cold water, exposure to cold, etc., are liable to cause diarrhoea.

Treatment consists in keeping the animal warm, rubbing the abdomen with alcoholic liniments, and giving opium, astringents and chalk; suppositories may also be of value. In feeding give meat, cooked rice stirred with yolk of egg, and meat broth.

I.

Spirit of camphor.....fl.oz. 2
Spirit of juniper.....fl.oz. 2

Rub the abdomen with this mixture 3 times daily and then inclose the animal in a warm wrap.

II.

Opium.....gr. 15
Althæa.....gr. 15
Licorice root.....gr. 45

Mix, make into a mass, and divide into 5 pills.

Give one pill mornings and evenings.

III.

Tannic acid.....gr. 50
Bismuth subnitrate.....gr. 80
Licorice root.....gr. 50
Mix, make into a mass, and divide into 10

pills.

Give one pill 8 times daily.

IV.

Bismuth subnitrate.....gr. 15
Extract of rhatany.....gr. 40
Sugar.....gr. 100

Mix and divide into 5 powders.

Give one powder every 4 hours.

V.

Lead carbonate.....gr. 8
Bismuth subnitrate.....gr. 30
Acacia.....gr. 40
Sugar.....gr. 80

Mix and divide into 10 powders.

Give one powder every 3 hours.

This mixture is intended for obstinate cases.

VI.

Rhubarb.....gr. 75
Cascarilla.....gr. 75
Prepared chalk.....gr. 150
Licorice root.....gr. 150

Mix all in powder and form into an electuary by the addition of mucilage.

Give a piece the size of a hazelnut three times daily.

VII.

Extract of rhatany.....gr. 18
Cacao butter.....gr. 180

Make into six suppositories.

One suppository should be inserted far up into the rectum after each copious evacuation.

Epilepsy Remedies.

I.

Zinc oxide.....gr. 20
Sulphur.....gr. 75
Jalap.....gr. 75
Extract of green hellebore.....gr. 20
Extract of gentian or dandelion

.. enough to form a mass

Divide into 60 pills.

Give one pill three times daily.

II.

Fluid extract of valerian.....f.dr. 1
Syrup of buckthorn.....f.dr. 3

For cats—15 to 20 drops every hour or two, with little milk or other food, or on some herbage like that of catnip.

Eye, Remedies for Inflammation of the.

In simple inflammation of the eye, give mild cathartics and use one of the eye waters mentioned below.

I.

Lead acetate.....gr. 10
Rose water.....f.oz. 2

Drop into the eye every hour.

II.

Zinc sulphate.....gr. 5
Rose water.....f.oz. 2

Use like the preceding.

III.

Magnesium sulphate.....av.oz. 1
Sodium chloride.....gr. 150
Fennel water.....f.oz. 8

Mix and dissolve.

Give one tablespoonful twice daily.

IV.

Sodium sulphate, dried.....gr. 300
Sodium bicarbonate.....gr. 75
Sodium chloride.....gr. 75
Licorice root.....gr. 300
Buckbean.....gr. 150

Mix all in powder and form into an electuary by the addition of juice of juniper berries, or, if this be not at hand, syrup, molasses or other suitable agent.

Give a piece of the size of a hazelnut twice daily.

Fits, Remedies for.

See Epilepsy Remedies.

Mange Remedies.

In addition to using the remedies mentioned below, the kennel should also be thoroughly disinfected.

I.

Benzine.....f.oz. 7
Oil of cade.....f.oz. 2
Coal tar.....f.oz. 2
Green soap.....f.oz. 2
Oil of turpentine.....f.oz. 2

Rub the soap and tar together, add the oil of cade, and then incorporate the other ingredients.

Rub this in once daily.

II.

Salicylic acid.....gr. 24
Lard.....av.oz. 1

This ointment is recommended for application to the head because soap cannot very well

be used in the vicinity of the eyes. It is to be applied once daily.

III.

Sulphur	av.oz.	6
Ammonium chloride.....	av.oz.	$\frac{3}{4}$
Aloes	gr.	90
Venice turpentine.....	av.oz.	$\frac{3}{4}$
Lard	av.oz.	9

Apply once a day and wash off after four applications.

IV.

Aloes	av.oz.	$\frac{1}{4}$
Mercurial ointment.....	av.oz.	$\frac{1}{4}$
Spirit of turpentine.....	fl.oz.	$1\frac{1}{2}$
Sulphur	av.oz.	2
Lard	av.oz.	4

Apply twice daily.

V.

Sulphurated potassa.....	gr.	50
Creosote.....	fl.dr.	$\frac{3}{4}$
Pine tar.....	gr.	90
Cocconut oil.....	fl.oz.	2

Cleanse the parts with soft or green soap, wash off well, dry, and then apply this ointment.

VI.

Sperm oil.....	fl.oz.	7
Kerosene.....	fl.oz.	7
Carbolic acid.....	fl.dr.	3
Pine tar.....	av.oz.	1
Sulphur.....	av.oz.	1

Apply once daily.

Rheumatism Remedies.

Treatment consists in giving sodium salicylate and mild cathartics and applying stimulant liniments.

I.

Sodium salicylate.....	gr.	192
Water	fl.oz.	6

Give one tablespoonful three times daily.

II.

Acetanilid	gr.	75
Rye flour.....	gr.	75

Mix and make into five pills.

Give one pill in the morning and one in the evening.

III.

Sodium nitrate.....	gr.	40
Magnesium sulphate.....	av.oz.	1
Solution of ammonium acetate..	fl.oz.	1
Water.....	enough to make	fl.oz. 6

Mix, dissolve and filter.

Give one tablespoonful every hour.

IV.

Spirit of camphor.....	fl.oz.	2
Spirit of formic acid.....	fl.oz.	2

Apply to the painful limbs three times daily and then wrap with a woollen cloth.

V.

Oil of turpentine.....	fl.dr.	1
Spirit of camphor.....	fl.oz.	2
Spirit of formic acid.....	fl.oz.	2

Use like the preceding.

Stomach Catarrh, Treatment for.

Dogs are very liable to overeating or to eat indigestible or decomposed food, and this may result in gastric catarrh.

Treatment consists in first giving an emetic; then a purgative may be administered unless there is diarrhoea, when medicine must be given to counteract the latter condition.

I.

Tartar emetic.....	gr.	$\frac{1}{2}$
Ipecac.....	gr.	15

Give at one dose in a spoonful of water.

II.

Aloes.....	gr.	60
Soap,		
Water.....	of each,	sufficient

Mix and make into three pills.

Give one pill every 5 hours.

III.

Tannic acid.....	gr.	15
Bismuth subnitrate.....	gr.	10
Calamus	gr.	150

Reduce all to powder, mix well, and divide into 5 parts.

Two hours after the emetic ceases to act give one powder in a little water, and repeat the dose every 12 hours.

Tonic Medicine.

Gentian	gr.	15
Ginger.....	gr.	5
Cascarilla.....	gr.	15

Mix and make into a pill.

Give one such pill every day.

Urine, Treatment for Bloody.

The usual treatment consists in giving mild cathartics and enemas.

I.

Magnesium sulphate.....	av.oz.	$\frac{1}{2}$
Tamarind pulp.....	av.oz.	$\frac{1}{2}$
Fennel water.....	fl.oz.	5

Mix, dissolve and filter.

Give one tablespoonful every 2 hours.

II.

- Yolk of one egg
Olive oil.....fl.dr. 4
Infusion of chamomile (1 in 20).fl.oz. 16

Make into an emulsion.

In using, warm to about 50 degs. C., and inject 8 fluidounces every three hours.

Vomiting, Remedies for.

I.

- Bismuth subnitrate.....gr. 30
Bitter almonds.....gr. 30
Althæa.....gr. 60

Mix all in powder, form a mass, and divide into 4 pills.

Give one pill every 2 hours.

II.

- Bismuth subnitrate.....gr. 8
Opium.....gr. 1½
Acacia.....gr. 8
Sugar.....gr. 15

Mix all in powder form.

Give the whole at one dose.

III.

- Bitter almond.....gr. 15
Creosote water.....fl.dr. 10
Mucilage of acacia.....fl.dr. 4

Give one-half and repeat the dose in 2 hours.

Worm Medicines.

I.

- Oleoresin of male fern.....gr. 30
Aloes.....gr. 40
Soap.....gr. 50

Mix and make into 2 pills.

Administer both pills in the morning, the animal to remain fasting for some time.

II.

- Oleoresin of male fern.....gr. 30
Castor oil.....fl.dr. 6

Warm the mixture and give in the morning, the animal to remain fasting as before.

III.

- Santonin.....gr. 2
Glass, fine powder.....gr. 3
Areca nut.....gr. 5
Jalap.....gr. 5

Make into one pill and give for a dose.

IV.

- Oil of turpentine.....fl.oz. 1
Castor oil.....fl.oz. 1

Dose: ½ fluidounce; repeat in two or three hours if it does not operate.

V.

- German wormseed, powdered.....dr. 1
Fluid extract of spigelia.....fl.dr. 3
Fluid extract of senna.....fl.dr. 1
Fluid extract of valerian.....fl.dr. 1
Syrup of buckthorn.....fl.oz. 2

Dose ½ to one teaspoonful night and morning. Suitable for cats.

Flea Powder.

- Napthalin.....av.oz. 4
Starch.....av.oz. 12

Reduce to fine powder. A few grains of lampblack added will impart a light gray color—and if desirable a few drops of oil of pennyroyal will disguise the napthalin odor. This is an excellent powder for the removal of fleas from cats or dogs, by rubbing into the skin of the animal and letting the powder remain for a day or two, when the same can be removed by combing or giving a bath to which some infusion of quassia has been added. This treatment is equally efficient for lice and ticks, with which dogs as well as cats are afflicted.

**SECTION VI—POULTRY MED-
ICINES.**

Poultry Powders.

Various mixtures of powdery substances are dispensed under the names "Poultry Powder," "Poultry Food," "Egg Food," and "Egg-Making Food." The latter two names are used because of the alleged property of these mixtures, of increasing the egg-laying power of hens.

I.

- Ground bone or slaked lime...av.oz. 12
Ginger.....av.oz. 2
Gentian.....av.oz. 1
Capsicum.....av.oz. 1
Sulphur.....av.oz. 1

Reduce all to powder and mix well.

Mix a teaspoonful with a quart of feed.

II.

- Oyster shells, coarse powder...av.oz. 24
Calcium carbonate.....av.oz. 4
Calcium phosphate.....av.oz. 4
Black pepper.....av.oz. 4
Capsicum.....av.oz. ½
Venetian red.....av.oz. ½

Reduce all to powder and mix well.

Use like the preceding.

III.

Capsicum.....	av.oz. 2
Allspice.....	av.oz. 4
Ginger.....	av.oz. 6

Reduce all to powder and mix well.

One tablespoonful to be mixed with every pound of food and fed two or three times a week. The addition of a little dried ants' eggs, if not too expensive, would prove beneficial.

IV.

Mustard.....	av.oz. 4
Fenugreek.....	av.oz. 8
Oyster shells, ground.....	av.oz. 2½
Bone, ground.....	av.oz. 1½
Sodium sulphate.....	av.oz. 1
Capsicum.....	av.oz. 2
Black antimony.....	av.oz. 2
Venetian red.....	av.oz. 2
Corn flour.....	av.oz. 4
Asafetida.....	gr. 90

Reduce all to powder and mix well.

A tablespoonful is to be mixed with sufficient meal or porridge to feed 20 hens.

V.

Egg shell, or calcium phosphate.....	av.oz. 4
Sulphate of iron.....	av.oz. 4
Capsicum.....	av.oz. 4
Fenugreek.....	av.oz. 2
Black pepper.....	av.oz. 1
Silver sand.....	av.oz. 2
Dog biscuit or lentils.....	av.oz. 6

Reduce all to powder and mix well.

Use like the preceding.

VI.

Calcium phosphate, or ground bone.....	av.oz. 12
Capsicum.....	av.oz. 1
Ginger.....	av.oz. 2
Cantharides.....	gr. 60
Sulphur.....	av.oz. 1
Potassium nitrate.....	av.oz. 1

Reduce all to powder and mix well.

Mix a tablespoonful with a quart of feed, and give two or three times a week.

VII.

Oyster shell, ground.....	av.oz. 5
Magnesia.....	av.oz. 1
Calcium carbonate.....	av.oz. 3
Bone, ground.....	av.oz. 1½
Mustard bran.....	av.oz. 1½
Capsicum.....	av.oz. 1
Salt.....	av.oz. 1
Iron sulphate.....	av.oz. ½
Sodium carbonate.....	av.oz. ½
Sulphur.....	av.oz. ½
Beef, lean, dried and powdered.....	av.oz. 10
Fine sand.....	av.oz. 10
Corn meal.....	av.oz. 20
Linseed meal.....	av.oz. 20

Reduce all to moderately coarse powder and mix well.

Use like the preceding.

VIII.

Mustard seed.....	av.oz. 10
Fenugreek.....	av.oz. 8
Sodium sulphate.....	av.oz. 2
Capsicum.....	av.oz. 1
Sodium chloride.....	av.oz. 1
Iron carbonate.....	av.oz. 1
Ginger.....	av.oz. 1
Black antimony.....	av.oz. 1
Bone, ground.....	av.oz. 1
Corn meal.....	av.oz. 10

Reduce all to powder and mix well.

Use like the preceding.

IX.

Sunflower seed.....	av.oz. 8
Mustard seed.....	av.oz. 8
Ginger.....	av.oz. 1
Oilcake meal.....	av.oz. 5
Sulphur.....	av.oz. 4
Capsicum.....	av.oz. ¼
Salt.....	av.oz. 2½
Venetian red.....	av.oz. 4
Bone meal.....	av.oz. 2½
Oyster shell, ground.....	av.oz. 2½
Chalk.....	av.oz. 2½
Magnesium sulphate.....	av.oz. 1

Reduce all to powder and mix well.

Use like the preceding.

X.

Mustard seed.....	av.oz. 5
Fenugreek.....	av.oz. 8
Oyster shell, ground.....	av.oz. 6
Bone meal.....	av.oz. 4
Sage.....	av.oz. 2
Sodium sulphate.....	av.oz. 2
Capsicum.....	av.oz. 1
Bayberry bark.....	av.oz. 1
Sodium chloride.....	av.oz. 1
Ginger.....	av.oz. 1
Black antimony.....	av.oz. 1
Fine sand.....	av.oz. 4
Asafetida.....	av.oz. ½
Wheat flour.....	av.oz. 5
Corn meal.....	av.oz. 5

Reduce all to powder and mix well.

Use like the preceding.

Chicken Lice from Coops, to Remove.

Carbolic acid, crude.....	fl.oz. 1
Water.....	fl.oz. 15

Wash the woodwork with this mixture and sprinkle in nests and on floor.

Chicken Cholera, Remedy for.

I.

Sulphuric acid.....	fl.oz. 1
Iron sulphate.....	av.oz. 16
Water, enough to make.....	gal. 1

Add 1 fluidounce of this mixture to a

pint of water, and supply in place of water, or mix with meal or other food.

II.

Iron sulphate.....	av.oz. 1
Capsicum.....	av.oz. 1
Black pepper.....	av.oz. 2
Calcium phosphate..	av.oz. 8
Fenugreek.....	av.oz. 4
Sand.....	av.oz. 4

Reduce all to powder and mix well.

An even teaspoonful is to be given with the feed for a dozen fowl.

III.

Give three or four teaspoonfuls of strong alum water once a day. This is recommended by the U. S. Department of Agriculture.

Roup Remedy.

Potassium chlorate.....	av.oz. 2
Cubebs.....	av.oz. 2
Anise.....	av.oz. 1
Licorice root.....	av.oz. 3

Reduce all to powder and mix well.

A teaspoonful of this is to be mixed with food for sixty hens.

SECTION VII—BIRD MEDICINES.**Mixed Bird Seed.**

Hemp seed.....	av.oz. 5
Canary seed.....	av.oz. 4
Millet seed.....	av.oz. 1
Maw seed.....	av.oz. 1

Various other mixtures are also used as mixed bird seeds; some of these contain rape seed.

Canary Bird Food.

Dried yolk of egg.....	av.oz. 2
Poppy heads, coarse powder....	av.oz. 1
Cuttlefish, coarse powder....	av.oz. 1
Sugar, granulated.....	av.oz. 2
Biscuit from wheat flour, dried and powdered.....	av.oz. 8

German Bird Paste or Canary Food.

I.

Corn meal.....	av.oz. 8
Sweet almonds, blanched.....	av.oz. 4
Butter, fresh.....	av.oz. 1
Sugar, powder.....	av.oz. 1
Saffron.....	gr. 5
Egg.....	1 or 2

Pass the egg through a fine grater and add to the other ingredients. Beat to a smooth paste with cold water, and granulate the

mass by passing through a coarse grater, then expose the product to the air in a warm place until quite hard and dry.

II.

Sweet almonds, blanched.....	av.oz. 8
Pea meal.....	av.oz. 16
Butter or lard, fresh.....	av.oz. 3
Saffron.....	gr. 10
Honey.....	sufficient

Beat together the ingredients until a smooth paste is formed, then granulate by pressing through a colander and allow to dry. Some prefer to add to the above the yolks of two eggs, or two or three hard-boiled eggs. Instead of the honey, 2 av. ounces of sugar may be used; then cold water must be added to the mixture to form a paste.

III.

Pea meal.....	av.oz. 8
Sugar, granulated.....	av.oz. 4
Fine-grated stale bread.....	av.oz. 4
Butter, fresh.....	av.oz. 1
Yolks of eggs.....	No. 1
Poppy seed.....	av.oz. 1
Hemp seed, bruised.....	av.oz. 16

Mix the first five ingredients, brown slightly in a frying pan and add the remaining ingredients.

Food for Larks, Nightingales and Other Insectivorous Birds.

Use either of the three formulas just immediately preceding.

Mocking Bird Food.

I.

Broken crackers.....	av.oz. 8
Corn.....	av.oz. 9
Rice.....	av.oz. 2
Hemp seed.....	av.oz. 1
Capsicum.....	gr. 10

Mix and reduce to coarse powder.

II.

Hemp seed.....	av.oz. 16
Rape seed.....	av.oz. 8
Crackers.....	av.oz. 8
Rice, unshelled.....	av.oz. 2
Corn meal.....	av.oz. 2
Capsicum.....	av.oz. 2
Lard oil.....	fl.oz. 2

Mix all but the oil, grind to coarse powder, and then incorporate the oil.

Food for Redbirds.

Sunflower seed.....	av.oz. 8
Hemp seed.....	av.oz. 16
Canary seed.....	av.oz. 10
Wheat, cracked.....	av.oz. 8
Rice, unshelled.....	av.oz. 6

Mix and grind to coarse powder.

III.

Oxheart	av.oz. 2
Wheat bread, toasted.....	av.oz. 4
Maw seed.....	av.oz. 2
Hemp seed.....	av.oz. 6

Boil the oxheart well in water, cut small, and place it in a pan in an oven where it must be allowed to become perfectly dry and crisp. All the ingredients must then be mixed and reduced to coarse powder.

Asthma in Canaries, Remedy for.

Tincture of capsicum.....	f.dr. 5
Spirit of chloroform.....	m. 90
Iron citrate, soluble.....	gr. 45
Fennel water	f.oz. 8½

Mix and dissolve.

Give a few drops on a lump of sugar in the cage once daily.

This mixture may be dispensed under the name "Pectoral Tonic."

Constipation Remedy for Birds.

Fluid extract of senna.....	f.dr. 2
Syrup of manna.....	f.oz. 1
Fennel water, enough to make...	f.oz. 4

Give a few drops on a lump of sugar in the cage once daily.

Diarrhoea Remedy for Birds.

Tincture of iron chloride.....	f.dr. 2
Paregoric.....	f.dr. 2
Caraway water.....	f.oz. 3½

Use like the preceding.

Gapes in Pheasants, Remedy for.

Ferrous sulphate.....	gr. 60
Capsicum.....	av.oz. ½
Fenugreek.....	av.oz. 1
Red saunders.....	av.oz. 1
Licorice root.....	av.oz. 2
Molasses.....	sufficient

General Directions for Care of Birds.

When ailing, the first thing is to keep the bird as quiet as possible; this is best accomplished by covering the cage closely. Most ailments of birds are due to a cold, the cause of which is generally owing to exposure to a draught of air or keeping the bird in an overheated room.

To cure a cold, add to the regular food equal parts of a paste consisting of hard-boiled eggs, corn meal and grated apple, the whole well spiced with Cayenne pepper. Sometimes the bird seems hoarse and has apparently lost his voice; this is frequently occasioned by over-singing, and is remedied by dissolving a little pure rock candy in the drinking water. Birds troubled with diarrhoea can usually be relieved by placing a rusty nail in their drinking water; if this is not effective, recommend "Diarrhoea Remedy." Should the bird be troubled with costiveness, mix an additional quantity of green fruit to the regular food; if this does not relieve, recommend "Constipation Remedy."

This is made into a paste, of which a piece the size of a hazelnut is dissolved in a gallon of water and given the birds to drink.

Ointment, Healing and Soothing.

Peru balsam.....	gr. 60
Cold cream.....	av.oz. 1

Tonic Medicine.

I.

Tincture of cinchona.....	f.dr. ½
Tincture of chloride of iron.....	drops 2
Glycerin.....	f.dr. 1
Caraway water.....	enough to make f.oz. 1

Put a few drops on a lump of sugar in the cage daily.

II.

Iron sulphate.....	gr. 120
Diluted sulphuric acid.....	drops 15
Water.....	f.oz. 8

Dissolve the sulphate in the water and add the acid.

A teaspoonful of this mixture is to be added to each quart of the drinking water of the birds. This is especially recommended for moulting birds.

This preparation is known as "Douglass' Mixture."

III.

Compound tincture of cinchona.....	f.dr. 2
Compound tincture of gentian.....	f.dr. 2
Syrup of orange.....	f.oz. 1
Simple elixir.....	f.oz. 2½

Put a few drops on a lump of sugar in the cage once daily.

These preparations may be dispensed under the names "Bird Tonic," or "Tonic Elixir."

When moulting, special attention should be paid to the birds, as any disease to which they are predisposed will show itself then. Give warming, nourishing food, keep the bird and cage clean, place in the warm sunlight and keep them out of draughts. Should this not be effective to recuperate them, recommend "Tonic Elixir."

The feet are often the seat of disease. To remove accumulations of dirt from the feet, hold them in lukewarm water for three or four minutes each day till the dirt drops off. If the feet are warty and seem to be sore, bathe them as above and grease them with fresh cream, or, still better, with an "Ointment of Cold Cream."

Pimples, or obstruction of the rump gland, is caused where the bird is not using the gland. Open the gland with a fine needle and apply the "Ointment of Cold Cream."

For lice, supply the cage daily with clean, fresh sand mixed with some "Insect Powder."

PART V.

TOILET PREPARATIONS.

This division naturally subdivides into the following sections:

SECTION 1. Distinctively Odor Preparations.

SECTION 2. Skin Preparations.

SECTION 3. Hair Preparations.

SECTION 4. Mouth (Tooth, Lip, Breath) Preparations.

SECTION 5. Bath Preparations.

SECTION I OF PART V.

Preparations used mainly or largely for their odor, including Handkerchief Extracts, Sachet Powders, Solid Perfumes, Pot Pourris, Fumigating Pastilles, Powders, etc.; Cologne Waters, Toilet Waters, Bay Rum, Toilet Vinegars, and Smelling Salts.

Perfumes.

Perfumes, as druggists employ the term, embrace Handkerchief Extracts, Cologne and Toilet Waters, and Sachet Powders.

Fine perfumes can be prepared only by the use of good material; in fact, the best obtainable is none too good for a discriminating taste. In the following paragraphs will be outlined the requisites of the best materials.

One of the first requisites in the manufacture of fine perfumes is a first-class quality alcohol, free from fusel oil or other odorous contamination that would modify or destroy the delicate floral odors which are the main ingredients of fine perfumes. The best kind of alcohol is what is known as "deodorized alcohol." (See process of manufacture in Part I.) Another grade of alcohol which is fairly good is what is sold as "cologne spirit," which is the "middle run" obtained in the manufacture of ordinary alcohol, and is fairly free from fusel oil.

The difference between ordinary alcohol and purified alcohol can be determined very easily by rubbing a few drops between the hands and allowing the alcohol to evaporate

entirely; a residuary odor remains in the case of ordinary alcohol, which is quite marked and very pungent and objectionable.

It is in the case of volatile oils probably that the greatest difficulty is experienced in securing first-class material. These substances should always be of the very best quality and of the best grade, free from adulteration, and should be preserved in small well-stoppered bottles in a cool place. Such oils as those of the citrine variety—orange, lemon, etc.—should be preserved by the addition of some alcohol, this being added as soon as the oils are received.

Oil of Bitter Almond is now obtainable deprived of hydrocyanic acid, and owing to the excessively poisonous character of the latter, such an oil should be preferred for perfumery purposes. The artificial oil should not be substituted for the natural product.

Oil of Neroli, or Orange Flowers, is of several varieties. The most highly esteemed and the one which should always be used for fine perfumes is what is known as Oil of Neroli Petale, distilled from the flowers of the sweet orange. The other varieties are Oil of Neroli Bigarade, obtained from the flowers of the bitter orange, and Oil of Petit Grain, which is produced by distilling the leaves and unripe fruit.

Much confusion exists regarding Oil of Rose Geranium. Only the best French or Spanish oil should be used. In the case of Oil of Cloves, what is known as the Bourbon variety is most highly esteemed. In the case of Oil of Orange, the Oil of Bitter Orange peel is considered the best. Of the oils of Lavender, the English, or so-called "Mitcham," is the best.

Oil of Orris occurs in two forms, concrete and liquid, but the latter only is to be employed in the formulas given below. Oil of Sandalwood is largely adulterated, and only the best English or East Indian oil should be used.

Volatile oils are frequently employed in the

form of spirits, or dilutions with alcohol, in the manufacture of liquid perfumes.

What is known as "pomades" are also of very great importance in the manufacture of perfumes. These are known by numbers which indicate the number of times purified lard has been impregnated with the flower odors by the method of enfleurage.

These pomades include the following odors: Rose, orange flowers, jasmine, tuberose, jonquil, cassie, reseda or mignonette, violet, lily of the valley, mimosa, and heliotrope. Before these pomades can be used they must be extracted by means of strong alcohol (to be described below); this alcoholic extract is known in this work by the title of "Essence."

Various animal substances are used in the manufacture of perfumes. These include musk, civet, and ambergris. Inasmuch as these are very expensive, they are subjected to the grossest adulterations, and the utmost care must be exercised to obtain the very purest of product.

These animal substances are not altogether used for their own odor but for their peculiar property of "fixing" the fugitive flower odors and making them permanent.

The best musk is the variety known as

Tonquin in "grains." This substance is employed usually in the form of a tincture or alcoholic extract. The extractive action of the alcohol is assisted by a small amount of alkaline water and placing the vessel containing the mixture in a warm place for at least 30 days.

Ambergris occurs in several varieties, the most esteemed of which is that kind known as the gray variety. Both it and civet are used in the form of alcoholic tinctures. To facilitate extraction, they are first triturated with about an equal amount of finely granulated orris root.

Among various crude vegetables employed in perfumery are orris root, vanilla, tonka, benzoin, tolu, storax, and Peru balsam. The best orris root is the kind known as Florentine; it is generally employed in the form of a concentrated alcoholic tincture. The other substances mentioned occur also in different grades or varieties, but only the very best should be selected for perfumery purposes. Like orris, all are generally employed in the form of alcoholic tinctures.

Among the other substances employed in the manufacture of perfumes are various chemicals such as heliotropin, hyacinthin, terpineol (also known commercially as

The following table is an interesting one as showing the relationship between the different odors:

Classification of Odors.

CLASSES.	TYPES.	ORDERS BELONGING TO THE SAME CLASS.
Rose	Rose	Geranium, sweet brier, rosewood.
Jasmine	Jasmine	Lily of the valley, white pond lily, ylang ylang.
Orange flower	Orange Flower	Acacia, syringa, orange leaves.
Tuberose	Tuberose	Lily, jonquil, hyacinth.
Violet	Violet	Orrisroot, mignonette.
Balsamic	Benzoin	Balsam of Peru, tolu, benzoin, storax.
Vanilla	Vanilla	Tonka.
Spice	Cinnamon	Nutmeg, mace, pimento.
Clove	Clove	Carnation, clove pink.
Camphor	Camphor	Rosemary, patchouly.
Sandal	Sandalwood	Vetivert, cedarwood.
Citrine	Lemon	Bergamot, orange, cedrat, limette
Herbaceous	Lavender	Thyme, marjoram, wild thyme.
Mint	Peppermint	Spearmint, balm, rue, sage.
Anise	Aniseed	Caraway, dill, coriander, fennel, star anise.
Almond	Bitter almond	Peach kernels, mirbane, cherry-laurel.
Musk	Musk	Civet, musk-seed, sumbul, ambergris.
Fruit	Pear	Apple, pineapple, quince.

lilacin or muguet), coumarin, vanillin, benzoic acid (so-called true or English should be employed in perfumery, this being prepared from benzoin and containing, therefore, some oily substance derived from the resin), etc.

Another chemical employed in making perfumes is ionone, which appears in the market in the form of a 10 per cent alcoholic solution; this is used in imitating the odor of violets. In late years these chemicals really play a most important part in perfumery manufacture.

Rose and orange flower waters are employed in some perfumes. In making handkerchief extracts, only the best imported "triple" water should be used.

Handkerchief Extracts.

Handkerchief extracts, or "extracts," as they are more commonly termed, are produced by incorporating with alcohol one or more essences (see definition of term above), one or more spirits (alcoholic solutions of volatile oil) or possibly the oils themselves, and a tincture of some of the animal or resinous substances mentioned above. Occasionally other ingredients are added, such as one of the chemicals, which really take the place of the volatile oil or spirit. This mixture should be set aside for some time (several weeks at least) to allow it to "ripen" or blend, after which it may be filtered.

If the ingredients of handkerchief extracts be classified according to their function, the classification would be as follows: (1) Odorous agents; (2) fixing agents, and (3) vehicle.

The essential odorous agents are the essences, spirits or oils, and chemical substances. The "fixing" agents consist of the musk, ambergris, civet, resins, orris, etc. The distinction between the first and second classes is not sharply drawn, for the reason that some of the "fixing" agents are used for their odor as well as for their "fixing" properties. The third class practically embraces but one substance, viz., alcohol, although rose and orange flower water are sometimes added after the alcohol, and may therefore also be considered as vehicles.

The office of "fixing" agents is chiefly

to hold the perfume to, or fix, or fasten it upon, the handkerchief or other fabric to which it is applied, it being understood that the odoriferous matters are all very volatile and therefore evanescent when exposed to the atmosphere. The "fixing" agents also serve to hold or secure the delicate flower odors to the vehicle while the moisture is still present in the container as "extract."

The "fixing" agents are of three varieties:

(1) Fatty matter derived from pomades during extraction with alcohol; (2) resinous substances, such as Peru balsam, tolu, storax, benzoin, orris, etc., and even myrrh, asafetida, aloes, etc., may be employed; and (3) animal substances, which include musk, ambergris and civet.

The objection to the first class is that they soon decompose and impart to the perfume a rancid odor, and consequently pains must be taken to exclude or remove all fat from the essence.

The objection to the second class is but an æsthetic one and hence is less serious than in the preceding. The resins impart a high color to the perfume and when the latter is dropped on a white handkerchief the fabric at once presents a soiled appearance. This is one reason why benzoin is often replaced by benzoic acid obtained by sublimation of the resin. Orris does not have the objection of imparting a high color, but the amount of resinous matter is so small that a very concentrated alcoholic tincture must be employed. Of course, all resins are objectionable because of their own odor, which may perceptibly modify the other odors, and this is sufficient reason why different resins are selected for different perfumes.

A suggestion may be thrown out here for using resins as "fixing" agents without obtaining any great amount of color, and that is to heat rather strongly a resinous substance, or suitable mixture of resinous substances, in a test tube plugged with a large wad of cotton. The latter becomes impregnated with odorous substances naturally contained in the resins, also some volatile empyreumatic substances formed by the destructive distillation, and will possess a certain amount of color. Upon placing in alcohol, these various prin-

ciples will be dissolved, and the alcoholic liquid may be used as before for "fixing" purposes.

The third class of "fixing" agents is remarkable in that but trifling amounts will serve the purpose, and hence they are the most largely employed. The one objection to their use is their pronounced and very persistent odor, which is likely to remain after the other odorous substances have dissipated. These substances include, as stated, musk, civet, and ambergris.

In all perfumes, the appearance, next to the odor, plays the most important part. The rule is that they should be either colorless or, at the most, of a very pale tint, pale green, for example, being a popular tint for "extracts." This color should be of such a character as to disappear on drying. Essence of cassie is sometimes added to "extracts" with a view of imparting this green tint. Sometimes a very trifling amount of green aniline is employed for the same purpose; the latter is more objectionable owing to the fact that it is liable to produce stains, and also owing to the presence of a poisonous substance, arsenic, in almost all anilines. An acceptable green coloring agent for white rose extract is a tincture of patchouly made in the proportion of 4 av. ounces of the leaves to 16 fluidounces of alcohol. The resins mentioned as "fixing" agents also impart color, this being brown, but is objectionable, as stated above, owing to its staining properties.

Care should be taken to preserve all perfumes, but particularly the "extracts," with proper care. They should never be exposed to strong light; exposure to air is also prejudicial and so is exposure to heat. Cold may precipitate or separate out some of the substances present in solution in the alcoholic liquid, and hence extracts should be preserved in locations of a moderate temperature, and this temperature should also be tolerably uniform. It may therefore be stated that "extracts" should be preserved in rather small (about 8 ounce) glass-stoppered bottles, out of contact with strong light, and at a uniform, medium temperature.

Some extracts named after flowers are prepared from essences or oils derived from the

flowers, to which are added suitable diluents and fixing agents. A great many flower odors are, however, so weak that they cannot be captured, or, if successfully and economically captured, cannot be properly "fixed"; in such instances it is customary to blend other odors so as to imitate the natural product. Heliotrope is, for example, a mixture of vanilla and rose, slightly modified by means of bitter almond. The odors of lily of the valley and lilac are imitated in a similar manner. Frequently the reputed imitations are but very poor imitations indeed.

Other odors besides flower odors are imitated, such, for example, as that of new mown hay. Then, again, there are other "extracts" which are pleasing mixtures or combinations of odors, which have received arbitrary titles such as "Upper Ten," "Marie Stuart," etc., and frequently also are known as "bouquets."

A convenient and popular, though indefinite, classification of "extracts" is into "delicate odors" and "heavy odors," the former including such as violet, heliotrope, lilac, etc., the latter musk, jockey club, etc.

A few remarks on how to sell perfumes will not be amiss at this juncture. A common practice among pharmacists in showing these goods to prospective customers is to remove the stopper from the stock bottle, and allow the customer to smell directly from the latter. The vehicle alcohol being more volatile than the volatile oils which form the real perfume, obtrudes itself upon the olfactory nerves and crowds away, as it were, the more delicate odors. The proper method of showing the "extracts" and indicating the differences between them is to wet the stopper by inverting the bottle, then to moisten a strip of blotting paper or a piece of rice (cigarette) paper, allowing the latter to become almost dry before handing to the patron. Another good suggestion is to have a small sample rack of perfumes containing a number of glass-stoppered half or one ounce bottles; this will enable the pharmacist to keep the stock bottles in a dark place to be opened only when an "extract" is to be dispensed. The sample rack may also be kept in a dark place when not in use. If the glass stoppers of

the bottles of the rack are of the elongated kind, so as to reach to the bottom of the bottle, the tissue or rice paper may be dispensed with.

In showing "extracts," the order in which they are shown is also a matter of consequence, especially when the prospective customer does not have any preferences. The finest, most delicate odors should always be shown first; if the heavy odors be presented first, the olfactory nerves will have become so impressed with the latter that the delicate odors which are shown subsequently will appear to be decidedly lacking in quality, and thus a sale may be lost.

The sale of "mixed odors," that is, a mixture of two or more "extracts," should be discouraged because each "extract" is a harmonized blending of odors, and mixing "extracts" is liable to destroy this harmony. However, this matter may not be of such great consequence, because those that ask for "mixed odors" do not properly appreciate the value of a well-made "extract."

In preparing the "extracts" which follow, the subjoined essences, spirits and tinctures should be employed

It is quite essential that the amateur manufacturer of "extracts" carefully peruse the preceding pages to inform himself upon the varieties of materials used in perfumes, the method of preservation, etc.

It may be stated that the "extracts" can be cheapened by the use of weaker pomades or inferior oils, or of a tincture of musk of one-half the strength given, by the substitution of civet for the ambergris, except in the case of ambergris extract, by the addition of larger proportions of alcohol and of some water, etc.

Essences.

Essences (extracts, extraits and esprits, they are also termed) are prepared, as already stated, by extraction of the odorous substances from pomades by means of alcohol, this process being known generally as "washing." The best method of washing is as follows:

Sixteen av. ounces of the pomade are cut into small pieces and placed in a bottle of sufficient capacity, such as a fruit jar, in

which is put 16 fluidounces of pure alcohol. Place the bottle, suitably stoppered, in a water bath, and apply heat sufficient to barely melt the pomade, shake well together, and repeat the shaking frequently until the fatty matter solidifies. In this way the pomade will be reduced to a finely divided or granular state, permeated thoroughly by the alcohol. Allow this to stand for a week—a month or even longer would be better—giving it an occasional shake, then drain off the liquid into another bottle; if this fall short of 16 fluidounces, repeat the operation with a sufficient quantity of alcohol to make up to this measure.

By subsequent and similar treatment, a second and even a third quantity of essence may be made, which, although much weaker, will be found useful in the preparation of colognes and toilet waters. Some operators use the second essence for washing a new quantity of original pomade, thus making a stronger essence or enabling one to use a weaker pomade. The residual pomade may be utilized for making hair pomades or as a diluent for mercurial or other ointments, or for making fine soaps (by manufacturers).

Essences prepared by the above method contain some fatty matter and will soon become rancid. This retained fatty matter can be separated by the application of cold, and in order that it may all be separated, the following process should be adopted in preference to the preceding one: Into an ice cream freezer of a size commensurate with the quantity of essence to be prepared, pour the requisite quantity of alcohol, then heat the pomade cautiously upon a water bath until melted, pour this into the freezer, put on the cover, set the apparatus in motion and continue the beating for 15 or 20 minutes, by which time probably all the odorous matter will have been extracted. Now surround the can with a freezing mixture, composed of ground rock salt and cracked ice, resume the beating until the liquid is thoroughly chilled and the fat has all adhered to the paddle and the sides of the can. Then open the freezer, pour off the liquid, and pass through a well-covered filter to separate the particles of fat still suspended in the liquid.

Spirit of Almond.

Oil of bitter almonds.....m. 80
Alcohol, enough to make.....fl.oz. 16

Spirit of Ambrette.

Oil of ambrette.....fl.dr. 2
Alcohol.....fl.oz. 8

Spirit of Bergamot.

Oil of bergamot.....fl.oz. 1
Alcohol.....fl.oz. 15

Spirit of Cedarwood.

Oil of cedar (Lebanon).....fl.dr. 4
Alcohol.....fl.oz. 9½

Spirit of Cinnamon.

Make according to formula in Part I, from 1 fluidounce of oil of cinnamon (Ceylon) and 9 fluidounces of alcohol.

Spirit of Cloves.

Oil of cloves.....fl.dr. 4
Alcohol.....fl.oz. 15½

Spirit of Hyacinth.

Hyacinthin.....gr. 60
Alcohol.....fl.oz. 16

Spirit of Lavender.

Prepare according to the formula in Part I, from 1 fluidounce of oil of lavender flowers and 19 fluidounces of alcohol.

Spirit of Lemon.

Prepare according to the formula in Part I, from 1 fluidounce of oil of lemon and 19 fluidounces of alcohol; the lemon peel may be omitted.

Spirit of Lemon Grass.

Oil of lemon grass.....fl.oz. 1
Alcohol.....fl.oz. 15

Spirit of Lilac.

Terpineol or lilacin.....gr. 120
Alcohol.....fl.oz. 8

Spirit of Linaloe.

Oil of linaloe.....fl.dr. 1¼
Alcohol.....fl.oz. 8

Spirit of Neroli.

Oil of neroli.....fl.dr. 4
Alcohol.....fl.oz. 15½

Spirit of Nutmeg.

Make according to the formula in Part I, from 1 fluidounce of oil of nutmeg and 19 fluidounces of alcohol.

Spirit of Orange.

Prepare according to the formula in Part I, from 1 fluidounce of oil of orange and 19 fluidounces of alcohol.

As stated in the introductory remarks on perfumes, the oil of bitter orange peel is to be preferred.

Spirit of Orris.

Oil of orris, liquid.....fl.dr. 1
Alcohol.....fl.oz. 8

Spirit of Patchouly.

Oil of patchouly.....fl.dr. 4
Alcohol.....fl.oz. 15½

Spirit of Pimento.

Oil of pimento.....fl.oz. 1
Alcohol.....fl.oz. 15

Spirit of Rose.

Oil of rose.....fl.dr. 4
Alcohol.....fl.oz. 7½

Spirit of Rose, Compound.

Spirit of rose.....fl.oz. 2
Spirit of rose geranium.....fl.oz. 2
Alcohol.....fl.oz. 4

Or mix

Oil of rose.....fl.dr. 2
Oil of rose geranium.....fl.dr. 1
Alcohol, enough to make.....fl.oz. 16

The oil of rose geranium is added to give permanence to the spirit.

Spirit of Rose Geranium.

Oil of rose geranium.....fl.dr. 4
Alcohol.....fl.oz. 15½

Spirit of Sandal.

Oil of sandalwood.....fl.dr. 2
Alcohol, enough to make.....fl.oz. 16

Spirit of Vetivert.

Oil of vetivert.....fl.dr. 1
Alcohol.....fl.oz. 8

Spirit of Ylang Ylang.

Oil of ylang ylang.....fl.dr. 8
Alcohol.....fl.oz. 16

Tincture of Ambergris.

Ambergris.....gr. 120
Orris root, powder.....gr. 120
Alcohol.....fl.oz. 16

Rub the ambergris and orris in a mortar until reduced to a fine powder; transfer to a bottle, and add the alcohol. Macerate for 80 days, agitating occasionally, and filter through paper.

Tincture of Ambrette.

Musk seed.....av.oz. 4
Alcohol.....sufficient

Reduce the drug to fine powder, and extract by slow percolation so as to obtain 16 fluidounces of product.

Tincture of Benzoin.

Siam benzoin, fine powder.....av.oz. 2
Alcohol.....fl.oz. 16

Mix, macerate for 80 days, agitating occasionally, and filter.

Tincture of Civet.

Civet.....gr. 60
Orris root, powder.....gr. 60
Alcohol.....fl.oz. 16

Proceed as with tincture of ambergris.

Tincture of Musk.

Musk.....gr. 120
Lime water, warm.....fl.oz. 4
Alcohol.....fl.oz. 12

Rub the musk to a fine paste with the water, macerate in a covered mortar for 2 hours, add the alcohol, and transfer to a tightly corked bottle, macerate for 30 days or longer, preferably in a rather warm place, agitate frequently.

Stronger Tincture of Orris.

Orris root, powder.....av.oz. 8
Alcohol.....sufficient

Extract the drug by slow percolation so as to obtain 16 fluidounces of product.

Weaker Tincture of Orris.

Orris root, powder.....gr. 600
Alcohol, enough to make.....fl.oz. 16

Prepare like the preceding.

Tincture of Peru Balsam.

Peru balsam.....av.oz. 1
Alcohol.....fl.oz. 15

Mix, macerate for 14 days, agitating occasionally, and filter.

Tincture of Storax.

Storax.....av.oz. 1
Alcohol, enough to make.....fl.oz. 16

Mix, macerate for 14 days with occasional agitation, and filter.

Tincture of Tolu.

Prepare according to formula in Part I, from 1¼ av. ounces of tolu and enough alcohol to make 16 fluidounces.

Tincture of Tonka.

Tonka.....av.oz. 3
Alcohol.....sufficient

Reduce the bean to moderately fine powder, add 16 fluidounces of alcohol, macerate for 14 days, agitating occasionally; filter, and add enough alcohol through the filter to make 16 fluidounces of product.

Tincture of Vanilla.

Vanilla.....gr. 480
Sugar (granulated or rock candy).gr. 480
Alcohol.....fl.oz. 16

Cut the drug into small pieces, beat with the sugar in a mortar until reduced to coarse powder, macerate with the alcohol for 30 days, and filter.

Acacia Extract.

Essence of cassie.....fl.oz. 4
Stronger tincture of orris.....fl.oz. 2
Tincture of vanilla.....fl.dr. 12
Tincture of ambergris.....fl.dr. 4
Alcohol.....fl.oz. 8½

Ambergris Extract.

Compound spirit of rose.....fl.oz. 3
Tincture of ambergris.....fl.oz. 8
Tincture of musk.....fl.oz. 4
Tincture of vanilla.....fl.oz. 1

Glove Pink Extract.

I.

Essence of rose.....fl.oz. 6
Essence of cassie.....fl.oz. 4
Essence of orange flowers.....fl.oz. 4
Tincture of vanilla.....fl.oz. 2
Oil of cloves.....drops 10

II.

Essence of rose.....fl.oz. 9
Essence of orange flowers.....fl.oz. 4½
Tincture of vanilla.....fl.oz. 3½
Oil of cloves.....m. 100

Crab Apple Blossom Extract.

Essence of violet.....fl.oz. 4
Essence of rose.....fl.oz. 2
Essence of jasmine.....fl.oz. 1
Essence of cassie.....fl.oz. 1
Spirit of ylang ylang.....fl.dr. 6¼
Spirit of linaloe.....fl.oz. 1¼
Spirit of neroli.....fl.dr. 2¼
Compound spirit of rose.....fl.dr. 4
Spirit of hyacinth.....fl.dr. 2
Tincture of musk.....fl.dr. 1
Oil of mace, volatile.....drops 4
Alcohol.....fl.oz. 1
Essence of jasmine, second
washing, enough to make.....fl.oz. 16

Cosmos Bouquet Extract.

Essence of jasmine	.....fl.dr.	6
Oil of bergamot	.....fl.dr.	3
Oil of lemon	.....drops	15
Oil of lavender	.....drops	9
Oil of cloves	.....drops	3
Coumarin	.....gr.	2¼
Heliotropin	.....gr.	¾
Tincture of civet	.....fl.dr.	1½
Weaker tincture of orris	.....fl.oz.	15

Mix and dissolve.

Elder Flower Extract.

Essence of jasmine	.....fl.oz.	2
Essence of rose	.....fl.oz.	2
Essence of tuberose	.....fl.oz.	2
Essence of jonquille	.....fl.oz.	2
Essence of orange flowers	.....fl.oz.	2
Spirit of ylang ylang	.....fl.oz.	5¼
Tincture of musk	.....fl.dr.	4
Tincture of ambergris	.....fl.dr.	2
Terpineol	.....gr.	60

Mix and dissolve.

Egyptian Lotus Extract.

Essence of jasmine	.....fl.oz.	3¼
Essence of rose	.....fl.dr.	3¼
Tincture of vanilla	.....fl.oz.	2
Tincture of civet	.....fl.oz.	2½
Tincture of benzoin	.....fl.dr.	5
Spirit of neroli	.....fl.dr.	7
Spirit of cloves	.....fl.dr.	8½
Spirit of patchouly	.....fl.dr.	1
Oil of rose	.....drop	1
Alcohol	.....fl.oz.	6½

Ess. Bouquet Extract.

I.		
Compound spirit of rose	.....fl.oz.	8
Spirit of lemon	.....fl.oz.	2½
Spirit of bergamot	.....fl.oz.	1
Spirit of neroli	.....fl.oz.	1
Tincture of ambergris	.....fl.oz.	1
Stronger tincture of orris	.....fl.oz.	1
Essence of cassie	.....fl.oz.	1
Alcohol	.....fl.dr.	4

II.		
Compound spirit of rose	.....fl.oz.	6
Spirit of lemon	.....fl.dr.	18
Spirit of rose geranium	.....fl.dr.	12
Stronger tincture of orris	.....fl.oz.	4½
Tincture of ambergris	.....fl.dr.	4½
Oil of bergamot	.....fl.dr.	4½
Alcohol	.....fl.dr.	6

III.		
Stronger tincture of orris	.....fl.dr.	2½
Tincture of musk	.....fl.dr.	1
Essence of jasmine	.....fl.oz.	12
Oil of rose	.....drops	16
Oil of neroli	.....drops	8
Alcohol, enough to make	.....fl.oz.	16

IV.

Oil of bergamot	.....fl.oz.	1
Oil of lemon	.....fl.dr.	1
Oil of neroli	.....fl.dr.	1
Essence of reseda	.....fl.oz.	14
Tincture of ambergris	.....fl.dr.	4
Alcohol	.....fl.dr.	4

V.

Essence of rose	.....fl.oz.	8
Tincture of orris	.....fl.oz.	4
Tincture of musk	.....fl.oz.	1
Oil of rose	.....m.	15
Oil of neroli	.....m.	15
Oil of bergamot	.....fl.dr.	4
Oil of lemon	.....fl.dr.	2
Rose water	.....sufficient	

As much of the latter may be added as is possible without causing precipitation.

Esterhazy Bouquet Extract.

Essence of orange flowers	.....fl.dr.	2½
Spirit of vetivert	.....fl.oz.	2
Spirit of rose	.....fl.dr.	1
Spirit of rose geranium	.....fl.dr.	3
Spirit of neroli	.....fl.dr.	3
Spirit of sandal	.....fl.dr.	4
Spirit of cloves	.....fl.dr.	2
Tincture of tonka	.....fl.oz.	3½
Tincture of vanilla	.....fl.oz.	2
Stronger tincture of orris	.....fl.oz.	1
Tincture of ambergris	.....fl.dr.	2
Alcohol	.....fl.oz.	5

Evening Primrose Extract.

Essence of orange flowers	.....fl.oz.	8
Essence of rose	.....fl.oz.	2
Essence of jasmine	.....fl.oz.	2
Compound spirit of rose	.....fl.oz.	5
Spirit of rose geranium	.....fl.dr.	10
Spirit of ambrette	.....fl.dr.	4
Spirit of patchouly	.....fl.dr.	1¼
Tincture of benzoin	.....fl.dr.	4
Tincture of musk	.....fl.dr.	1
Alcohol	.....fl.dr.	12

Fashion Bouquet Extract.

Oil of rose	.....m.	45
Oil of neroli	.....m.	80
Spirit of bergamot	.....fl.oz.	1
Tincture of musk	.....fl.oz.	6
Stronger tincture of orris	.....fl.oz.	1
Essence of jasmine	.....fl.oz.	8
Benzoic acid	.....gr.	80
Alcohol, enough to make	.....fl.oz.	16

Frangipanni Extract.

I.		
Essence of orange flowers	.....fl.oz.	2¼
Spirit of sandal	.....fl.oz.	4
Spirit of neroli	.....fl.oz.	2
Spirit of rose	.....fl.oz.	1
Tincture of musk	.....fl.dr.	8
Tincture of tonka	.....fl.dr.	11
Alcohol	.....fl.oz.	3½

II.

Tincture of musk	fl.oz. 5
Tincture of civet	fl.dr. 4
Stronger tincture of orris	fl.oz. 3
Essence of orange flowers	fl.oz. 3
Essence of tuberose	fl.oz. 3
Spirit of vetivert	fl.oz. 1
Oil of rose	fl.dr. 2
Oil of rose geranium	fl.dr. 1
Oil of sandal	fl.dr. 1
Oil of neroli	fl.dr. 1

III.

Essence of orange flowers	fl.oz. 4
Essence of cassie	fl.oz. 2
Spirit of orris	fl.oz. 3
Spirit of sandal	fl.dr. 17
Compound spirit of rose	fl.dr. 22
Spirit of vetivert	fl.dr. 12
Spirit of rose geranium	fl.dr. 5½
Tincture of musk	fl.dr. 1½
Tincture of tolu	m. 80
Oil of neroli bigarade	drops 80

Frangipanni (Roman) Extract.

Musk	gr. 12
Ambergris	gr. 8
Vanilla, cut fine and triturated	gr. 60
Tonka, bruised	gr. 120
Essence of cassie	fl.dr. 2
Essence of rose	fl.dr. 2
Essence of orange flowers	fl.dr. 2
Essence of tuberose	fl.dr. 2
Stronger tincture of orris	fl.oz. 2½
Oil of rose	drops 22
Oil of cedar, Lebanon	drops 22
Oil of rose geranium	drops 10
Oil of neroli petale	drops 12
Oil of orange (from bitter orange)	drops 8
Alcohol	fl.oz. 14

Mix and macerate for several months, agitating occasionally.

Flowers of Ireland Extract.

White rose extract	fl.oz. 15
Tincture of vanilla	fl.dr. 12

Heliotrope Extract.

I.

Tincture of vanilla	fl.oz. 8
Tincture of ambergris	fl.oz. 1
Tincture of civet	fl.oz. 1
Compound spirit of rose	fl.oz. 3
Oil of bitter almond	drops 5
Essence of rose	fl.oz. 3

II.

Essence of jasmine	fl.oz. 1
Tincture of vanilla	fl.oz. 4
Tincture of musk	fl.oz. 1
Tincture of storax	fl.dr. 1
Spirit of neroli	fl.dr. 5½
Spirit of almond	fl.dr. 6
Spirit of rose	fl.dr. 2½
Alcohol	fl.oz. 8

III.

Essence of jasmine	fl.oz. 9¼
Oil of rose	drops 6
Oil of bitter almonds	drops 3
Tincture of musk	drops 6
Ess. bouquet extract	fl.oz. 4½
Heliotropin	gr. 22

Mix and dissolve.

IV.

Spirit of bergamot	fl.oz. 6
Tincture of benzoin	fl.dr. ½
Vanillin	gr. 2
Heliotropin	gr. 10
Alcohol	fl.oz. 9

Mix and dissolve.

Heliotrope (White) Extract.

Essence of jasmine	fl.oz. 4
Essence of rose	fl.oz. 2
Essence of tuberose	fl.oz. 2
Spirit of ylang ylang	fl.dr. 6¾
Tincture of civet	fl.dr. 6
Tincture of musk	fl.dr. 1
Heliotropin	gr. 50
Coumarin	gr. 20
Alcohol, enough to make	fl.oz. 16

Mix and dissolve.

Hesperis Extract.

Essence of cassie	fl.oz. 3
Essence of orange flowers	fl.oz. 3
Tincture of musk	fl.dr. 4
Tincture of benzoin	fl.oz. 2
Tincture of tonka	fl.dr. 5½
Oil of bergamot	fl.dr. 2
Oil of cloves	fl.dr. 1
Spirit of lavender	fl.oz. 2½
Spirit of rose	fl.dr. 4
Rose water	fl.dr. 4
Alcohol, enough to make	fl.oz. 16

Honeysuckle Extract.

Essence of rose	fl.oz. 4
Essence of violet	fl.oz. 4
Essence of tuberose	fl.oz. 4
Tincture of vanilla	fl.oz. 1
Tincture of tolu	fl.oz. 1
Tincture of musk	fl.oz. 1
Spirit of bitter almond	fl.dr. 3¼
Spirit of neroli	fl.dr. 1½
Alcohol	fl.dr. 4

Hyacinth Extract.

Hyacinthin	gr. 90
Oil of neroli bigarade	drops 80
Tincture of musk	fl.dr. 2½
Tincture of benzoin	fl.dr. 5
Essence of jasmine	fl.oz. 3
Alcohol	fl.oz. 12
Orange flower water, triple	fl.oz. 1½

Jockey Club Extract.**I.**

Compound spirit of rose.....	f.oz. 4
Essence of rose.....	f.oz. 1
Essence of tuberose.....	f.oz. 4
Essence of cassie.....	f.oz. 2
Essence of jasmine.....	f.oz. 1
Essence of orange flowers.....	f.oz. 1
Tincture of civet.....	f.oz. 2
Tincture of musk.....	f.oz. 1

II.

Essence of tuberose.....	f.oz. 5½
Essence of cassie.....	f.oz. 2½
Essence of jasmine.....	f.oz. 1½
Compound spirit of rose.....	f.oz. 3½
Spirit of ambrette.....	f.oz. 1
Spirit of neroli.....	f.dr. 2¼
Tincture of civet.....	f.dr. 4
Alcohol, enough to make.....	f.oz. 16

III.

Essence of orange flowers.....	f.oz. 4
Essence of cassie.....	f.oz. 2
Essence of jasmine.....	f.oz. 2
Compound spirit of rose.....	f.oz. 4
Spirit of rose geranium.....	f.dr. 15
Spirit of ambrette.....	f.dr. 4
Spirit of bergamot.....	f.dr. 1½
Spirit of cloves.....	f.dr. 1
Tincture of musk.....	f.dr. 1
Alcohol, enough to make.....	f.oz. 16

IV.

Essence of jasmine.....	f.oz. 1
Essence of orange flowers.....	f.dr. 2
Stronger tincture of orris.....	f.oz. 6
Tincture of civet.....	f.dr. 4½
Tincture of vanilla.....	f.dr. ¾
Spirit of sandal.....	f.oz. 3
Spirit of bergamot.....	f.oz. 2¼
Spirit of rose.....	f.dr. 6
Benzoic acid.....	gr. 80

V.

Essence of jasmine.....	f.dr. 10
Essence of violet.....	f.dr. 4
Tincture of musk.....	f.dr. 2
Tincture of vanilla.....	f.dr. 4½
Spirit of rose.....	f.dr. 6
Spirit of sandal.....	f.oz. 3
Spirit of neroli.....	f.dr. 5½
Benzoic acid.....	gr. 80
Alcohol.....	f.oz. 14

Mix and dissolve.

VI.

Oil of rose.....	f.dr. ½
Oil of cedar, Lebanon.....	m. 15
Oil of bergamot.....	f.dr. 2
Essence of violet.....	f.oz. 12
Essence of jasmine.....	f.oz. 2
Essence of rose.....	f.oz. 4
Tincture of civet.....	f.oz. 2

Kiss-Me-Quick Extract.

Essence of cassie.....	f.oz. 2½
Essence of jasmine.....	f.dr. 10
Essence of tuberose.....	f.dr. 10
Tincture of vanilla.....	f.dr. 2½
Tincture of benzoin.....	f.dr. 1¾
Stronger tincture of orris.....	f.dr. 1¾
Tincture of musk.....	m. 50
Spirit of bergamot.....	f.dr. 7
Spirit of neroli.....	f.dr. 5½
Alcohol.....	f.oz. 9

Lilac Extract.**I.**

Essence of tuberose.....	f.oz. 12
Essence of orange flowers.....	f.oz. 8
Tincture of civet.....	f.dr. 4
Spirit of ylang ylang.....	f.dr. 4
Oil of bitter almonds.....	drops 8

II.

Essence of jasmine.....	f.oz. 3
Essence of tuberose.....	f.oz. 2
Essence of rose.....	f.oz. 2
Spirit of lilac.....	f.oz. 4
Spirit of hyacinth.....	f.dr. 10½
Spirit of ylang ylang.....	f.dr. 6½
Tincture of civet.....	f.dr. 6
Tincture of musk.....	f.dr. 1
Heliotropin.....	gr. 20
Alcohol, enough to make.....	f.oz. 16

III.

Essence of tuberose.....	f.oz. 2½
Essence of orange flowers.....	f.oz. 2½
Essence of violet.....	f.dr. 10
Essence of cassie.....	f.oz. 1
Spirit of ylang ylang.....	f.dr. 27
Tincture of civet.....	f.dr. 5
Alcohol.....	f.oz. 7

IV.

Essence of tuberose.....	f.oz. 4
Essence of orange flowers.....	f.oz. 1
Tincture of civet.....	f.dr. 1½
Spirit of almonds.....	f.dr. 2½
Alcohol.....	f.oz. 10½

These lilac extracts are usually known by such titles as "White Lilac," "Lilac Blossom," etc.

Lily of the Valley Extract. (White Pond Lily Extract.)**I.**

Essence of tuberose.....	f.oz. 8
Essence of jasmine.....	f.oz. 1
Essence of orange flowers.....	f.oz. 1
Essence of cassie.....	f.oz. 2
Essence of rose.....	f.oz. 2
Compound spirit of rose.....	f.oz. 1
Oil of bitter almonds.....	drops 2
Tincture of vanilla.....	f.oz. 1

II.

Essence of rose.....	f.oz. 4
Essence of violet.....	f.oz. 2
Essence of jasmine.....	f.oz. 1
Essence of cassie.....	f.oz. 1
Spirit of linaloe.....	f.oz. 1½
Spirit of ylang ylang.....	f.dr. 6½
Compound spirit of rose.....	f.dr. 4
Spirit of neroli.....	f.dr. 2¼
Tincture of musk.....	f.dr. 1
Oil of mace, volatile.....	drops 6
Alcohol.....	f.oz. 2
Essence of rose, second wash- ing, enough to make.....	f.oz. 16

III.

Essence of tuberose.....	f.dr. 21
Essence of cassie.....	f.dr. 11
Essence of jasmine.....	f.dr. 2½
Essence of orange flowers.....	f.dr. 5½
Spirit of rose.....	f.dr. 5½
Spirit of rose geranium.....	f.dr. 11
Spirit of almond.....	f.dr. 2
Alcohol.....	f.oz. 9

IV.

Essence of jasmine.....	f.oz. 6
Cardamom, powdered without membranes.....	gr. 60
Spirit of ylang ylang.....	f.dr. 21
Alcohol.....	f.oz. 7½

Mix, macerate for several weeks or a month,
agitating frequently, and filter.

V.

Essence of jasmine.....	f.oz. 20
Cardamom, powdered without membranes.....	gr. 60
Oil of ylang ylang.....	f.dr. 1
Weaker tincture of orris.....	f.oz. 4

Prepare like the preceding.

Lavender Extract.

Essence of rose.....	f.oz. 2
Spirit of lavender.....	f.oz. 10
Alcohol.....	f.oz. 4

Lily (White) Extract.

Essence of rose.....	f.dr. 19
Essence of orange flowers.....	f.dr. 9½
Essence of cassie.....	f.dr. 9½
Tincture of vanilla.....	f.dr. 14
Spirit of cloves.....	f.dr. 4½
Alcohol.....	f.oz. 9

Liriodendron Extract.

Essence of cassie.....	f.dr. 5½
Essence of tuberose.....	f.dr. 5½
Essence of orange flowers.....	f.dr. 5½
Tincture of benzoin.....	f.oz. 1
Tincture of civet.....	f.oz. 4
Tincture of orris.....	f.oz. 4
Spirit of bergamot.....	f.oz. 2
Spirit of rose.....	f.dr. 5
Alcohol.....	f.oz. 1

Locust Blossom Extract.

Essence of jasmine.....	f.oz. 8
Essence of cassie.....	f.oz. 1½
Tincture of vanilla.....	f.oz. 1½
Tincture of civet.....	f.oz. 1½
Alcohol.....	f.oz. 8½

May Bells Extract. (Mabel Bouquet
Extract.)

I.

Essence of jasmine.....	f.oz. 3¼
Ylang ylang extract No. 1.....	f.oz. 3¼
Stronger tincture of orris.....	f.oz. 2¼
Fluid extract of cardamom.....	m. 80
Alcohol.....	f.oz. 6½

The fluid extract may be replaced by 8
drops of oil of cardamom.

II.

Essence of jasmine.....	f.oz. 12
Ylang ylang extract.....	f.oz. 4
Orris root, granulated.....	av.oz. 2
Cardamom seed, powder.....	gr. 60

Mix, let stand 7 days, agitating occasion-
ally, and filter.

Marie Stuart Extract.

I.

Essence of cassie.....	f.oz. 2
Essence of orange flowers.....	f.oz. 2
Essence of rose.....	f.oz. 2
Compound spirit of rose.....	f.oz. 4
Spirit of bergamot.....	f.dr. 12
Spirit of rose geranium.....	f.dr. 10
Spirit of patchouly.....	f.dr. 2¼
Tincture of musk.....	f.dr. 2
Tincture of tonka.....	f.dr. 5½
Tincture of tolu.....	f.dr. 5
Tincture of benzoin.....	f.dr. 4
Coumarin.....	gr. 25
Oil of verbena.....	m. 15
Alcohol.....	f.oz. 1

Mix and dissolve.

II.

Essence of rose.....	f.dr. 9
Essence of jasmine.....	f.dr. 8½
Spirit of bergamot.....	f.dr. 14
Tincture of musk.....	f.dr. 3½
Tincture of ambergris.....	f.dr. 7
Tincture of vanilla.....	f.dr. 7
Stronger tincture of orris.....	f.dr. 7
Alcohol, enough to make.....	f.oz. 16

Mousseline Extract.

Esterhazy bouquet extract.....	f.oz. 5
Essence of cassie.....	f.dr. 7
Essence of jasmine.....	f.dr. 7
Essence of tuberose.....	f.dr. 7
Spirit of sandal.....	f.oz. 5
Compound spirit of rose.....	f.dr. 18
Spirit of rose geranium.....	f.dr. 8½
Alcohol.....	f.oz. 2

Millefleurs Extract.

Compound spirit of rose.....	fl.oz. 3
Essence of rose.....	fl.oz. 1
Essence of jasmine.....	fl.oz. 4
Essence of orange flowers.....	fl.oz. 2
Essence of cassie.....	fl.oz. 2
Stronger tincture of orris.....	fl.oz. 2
Tincture of tonka.....	fl.oz. 1
Tincture of ambergris.....	fl.dr. 4
Tincture of musk.....	fl.dr. 4
Oil of bergamot.....	fl.dr. 2
Oil of bitter almond.....	drops 3
Oil of neroli.....	drops 3
Oil of cloves.....	drops 3

Musk Extract.

I.	
Tincture of musk.....	fl.oz. 11
Tincture of civet.....	fl.oz. 1
Compound spirit of rose.....	fl.oz. 4

This is a rather high-priced article, but the tincture of musk may be reduced one-half with alcohol and still yield a satisfactory product.

II.	
Essence of orange flowers.....	fl.oz. 2
Essence of cassie.....	fl.oz. 2
Spirit of rose.....	fl.oz. 1
Tincture of musk.....	fl.oz. 1½
Tincture of civet.....	fl.oz. 1½
Tincture of vanilla.....	fl.dr. 4
Tincture of tonka.....	fl.dr. 6
Tincture of tolu.....	fl.dr. 5
Tincture of benzoin.....	fl.dr. 4
Alcohol.....	fl.oz. 5

III.	
Musk.....	gr. 288
Civet.....	gr. 54
Ambergris.....	gr. 86
Musk seed.....	av.oz. 6
Alcohol.....	fl.oz. 18

Triturate the musk seed to powder, add the alcohol, macerate in a warm place for 2 or 3 weeks, agitating frequently; place into a percolator, and percolate until 15 fluid-ounces of liquid have been obtained. To this liquid, add the musk, civet and ambergris, making an intimate mixture; place the whole away in a well-stoppered bottle in a warm place for 2 months, agitating frequently, and filter.

This is reputed to produce a very fine musk extract.

New Mown Hay Extract.

I.	
Coumarin.....	gr. 8
Vanillin.....	gr. 4
Weaker tincture of orris.....	fl.oz. 16

II.

Tincture of tonka.....	fl.oz. 12
Essence of rose.....	fl.oz. 2
Essence of jasmine.....	fl.oz. 2
Oil of rose geranium.....	fl.dr. 1
Oil of rose.....	drops 15
Oil of neroli.....	drops 10

III.

Essence of orange flowers.....	fl.oz. 3
Essence of tuberose.....	fl.oz. 2
Essence of jasmine.....	fl.oz. 2
Compound spirit of rose.....	fl.oz. 3
Spirit of ambrette.....	fl.oz. 2
Spirit of lavender.....	fl.dr. 10
Tincture of vanilla.....	fl.oz. 2
Tincture of tonka.....	fl.dr. 5½
Tincture of civet.....	fl.dr. 4
Tincture of benzoin.....	fl.dr. 1½
Oil of limette.....	drops 30

IV.

Essence of orange flowers.....	fl.oz. 8½
Essence of tuberose.....	fl.dr. 7
Spirit of rose.....	fl.dr. 5
Spirit of neroli.....	fl.dr. 5
Tincture of tonka.....	fl.dr. 7
Alcohol.....	fl.oz. 9½

Night-Blooming Cereus Extract.

Essence of jasmine.....	fl.oz. 4
Tincture of tonka.....	fl.oz. 4
Tincture of civet.....	fl.oz. 2
Tincture of benzoin.....	fl.oz. 4
Spirit of rose.....	fl.oz. 1
Spirit of rose geranium.....	fl.oz. 1

Ocean Spray Extract. ("Sea Breeze" Extract.)

Essence of orange flowers.....	fl.oz. 6
Essence of jasmine.....	fl.oz. 3
Compound spirit of rose.....	fl.oz. 5
Spirit of ambrette.....	fl.dr. 4
Spirit of cloves.....	fl.dr. 4½
Tincture of musk.....	fl.dr. 1½
Tincture of vanilla.....	fl.dr. 6

Orange Flower Extract.**I.**

Essence of orange flowers.....	fl.oz. 12
Essence of cassie.....	fl.oz. 2
Tincture of musk.....	fl.oz. 2

II.

Essence of orange flowers.....	fl.oz. 4½
Stronger tincture of orris.....	fl.dr. 14
Tincture of musk.....	fl.dr. ½
Spirit of neroli.....	fl.dr. 1
Alcohol, enough to make.....	fl.oz. 16

Patchouly Extract.**I.**

Spirit of patchouly.....	fl.oz. 5
Spirit of rose.....	fl.dr. 4
Alcohol.....	fl.oz. 10½

II.

Spirit of patchouly.....	fl.dr.	8½
Spirit of bergamot.....	fl.oz.	2
Essence of jasmine.....	fl.oz.	4
Essence of rose.....	fl.oz.	2
Tincture of benzoin.....	fl.dr.	2
Alcohol, enough to make.....	fl.oz.	16

III.

Patchouly leaves, cut.....	av.oz.	5
Alcohol.....	fl.oz.	18
Water.....	fl.oz.	16
Salt.....	av.oz.	4
Oil of lavender.....	m.	25
Tincture of musk.....	m.	30

Mix the patchouly with the alcohol, macerate for 7 days, add the water, salt and oil, agitate well together, distill rapidly until 16 fluidounces of distillate are obtained, and to this add the tincture.

Peach Blossom Extract.

Essence of orange flowers.....	fl.oz.	3½
Essence of tuberose.....	fl.dr.	7
Spirit of lemon.....	fl.dr.	13
Spirit of almond.....	fl.oz.	2½
Tincture of Peru balsam.....	fl.dr.	5½
Alcohol.....	fl.oz.	6

Bondeletia Extract.

I.

Tincture of musk.....	fl.dr.	4
Tincture of ambergris.....	fl.dr.	4
Tincture of vanilla.....	fl.dr.	4
Spirit of lavender.....	fl.oz.	5
Spirit of cloves.....	fl.oz.	4
Spirit of bergamot.....	fl.oz.	2
Spirit of rose.....	fl.oz.	1
Alcohol.....	fl.oz.	2

II.

Spirit of lavender.....	fl.oz.	8
Spirit of cloves.....	fl.oz.	8
Spirit of bergamot.....	fl.oz.	1½
Compound spirit of rose.....	fl.dr.	10
Spirit of rose geranium.....	fl.dr.	5
Tincture of musk.....	fl.dr.	6
Tincture of ambergris.....	fl.dr.	1½
Tincture of vanilla.....	fl.dr.	2¼
Alcohol, enough to make.....	fl.oz.	15

III.

Spirit of bergamot.....	fl.oz.	2
Spirit of lemon.....	fl.oz.	2½
Spirit of cloves.....	fl.oz.	4
Spirit of lavender.....	fl.oz.	2½
Spirit of neroli.....	fl.oz.	1
Spirit of rose.....	fl.dr.	2½
Alcohol.....	fl.oz.	4

Rose (Moss) Extract.

Compound spirit of rose.....	fl.oz.	9
Essence of orange flowers.....	fl.oz.	8
Essence of rose.....	fl.oz.	2
Tincture of civet.....	fl.oz.	1
Tincture of musk.....	fl.oz.	1

Rose (Musk) Extract.

Essence of rose.....	fl.dr.	9½
Essence of tuberose.....	fl.dr.	4½
Essence of jasmine.....	fl.dr.	4½
Stronger tincture of orris.....	fl.dr.	14
Tincture of musk.....	fl.dr.	7
Spirit of orange.....	fl.dr.	1¾
Spirit of rose.....	fl.dr.	1½
Alcohol, enough to make.....	fl.oz.	16

Rose (Tea) Extract.

I.

Essence of rose.....	fl.oz.	4
Essence of orange flowers.....	fl.oz.	1
Compound spirit of rose.....	fl.oz.	8
Spirit of sandal.....	fl.oz.	2
Stronger tincture of orris.....	fl.oz.	1
Oil of rose geranium.....	drops	20

II.

Essence of rose.....	fl.dr.	10½
Compound spirit of rose.....	fl.dr.	22
Spirit of rose geranium.....	fl.dr.	22
Spirit of sandal.....	fl.dr.	10½
Spirit of neroli.....	m.	160
Stronger tincture of orris.....	fl.oz.	1
Alcohol, enough to make.....	fl.oz.	16

Rose (White) Extract.

I.

Compound spirit of rose.....	fl.oz.	8
Essence of rose.....	fl.oz.	3
Essence of jasmine.....	fl.oz.	4
Patchouly extract, No. 1.....	fl.oz.	1

II.

Oil of rose.....	fl.dr.	1½
Spirit of rose geranium.....	fl.oz.	1½
Essence of rose.....	fl.oz.	3
Essence of jasmine.....	fl.oz.	1½
Tincture of musk.....	fl.dr.	6
Tincture of ambergris.....	fl.dr.	6
Alcohol.....	fl.oz.	¾

III.

Essence of rose.....	fl.oz.	4
Essence of jasmine.....	fl.oz.	2
Essence of violet.....	fl.oz.	2
Compound spirit of rose.....	fl.oz.	8
Spirit of patchouly.....	m.	70
Tincture of ambergris.....	fl.dr.	2
Alcohol.....	fl.dr.	5

IV.

Essence of violet.....	fl.oz.	4
Essence of jasmine.....	fl.oz.	2
Compound spirit of rose.....	fl.oz.	8
Spirit of patchouly.....	fl.dr.	2½
Tincture of ambergris.....	fl.oz.	½
Alcohol.....	fl.oz.	1

V.

Essence of rose.....	fl.dr.	17
Essence of violet.....	fl.dr.	13½
Essence of jasmine.....	fl.oz.	1
Spirit of rose.....	fl.dr.	5½
Spirit of patchouly.....	m.	80
Alcohol.....	fl.oz.	9½

VI.

Spirit of rose.....	fl.oz.	1
Spirit of cedar.....	fl.dr.	½
Spirit of patchouly.....	fl.dr.	4
Spirit of orange.....	fl.dr.	2½
Essence of tuberose.....	fl.dr.	4
Essence of violet.....	fl.dr.	4
Essence of jasmine.....	fl.dr.	4
Tincture of musk.....	fl.dr.	4
Benzoic acid.....	gr.	15
Alcohol.....	fl.oz.	14½

VII.

Spirit of rose.....	fl.oz.	2
Spirit of bergamot.....	fl.oz.	1
Spirit of patchouly.....	fl.dr.	4
Spirit of pimento.....	fl.dr.	2
Essence of jasmine.....	fl.oz.	2
Alcohol.....	fl.oz.	9
Rose water, triple.....	fl.dr.	10

Sweet Brier Extract.

Oil of bergamot.....	fl.dr.	6
Oil of lemon.....	fl.dr.	6
Oil of lavender.....	fl.dr.	4
Oil of verbena.....	drops	8
Spirit of rose.....	fl.oz.	2
Spirit of almond.....	fl.dr.	12½
Tincture of musk.....	fl.oz.	2
Alcohol.....	fl.oz.	8½

Rose (Yellow) Extract.

Essence of rose.....	fl.oz.	2
Essence of tuberose.....	fl.oz.	2
Tincture of tonka.....	fl.dr.	10
Verbena extract.....	fl.dr.	2½
Alcohol.....	fl.oz.	10½

Rose Geranium Extract.

Oil of rose geranium.....	fl.oz.	1
Alcohol.....	fl.oz.	15

Spring Flowers Extract.

Essence of rose.....	fl.oz.	7
Essence of violet.....	fl.oz.	6
Essence of cassie.....	fl.oz.	1
Compound spirit of rose.....	fl.oz.	1
Tincture of ambergris.....	fl.oz.	1
Oil of bergamot.....	fl.dr.	1

Stephanotis Extract.

Essence of cassie.....	fl.dr.	5¼
Essence of tuberose.....	fl.dr.	5¼
Essence of jasmine.....	fl.dr.	2¾
Stronger tincture of orris.....	fl.oz.	4
Tincture of tonka.....	fl.oz.	1
Tincture of musk.....	fl.oz.	1
Spirit of rose.....	fl.dr.	4
Spirit of neroli.....	fl.dr.	4
Benzoic acid.....	gr.	30
Alcohol, enough to make.....	fl.oz.	16

Tuberose Extract.

Essence of tuberose.....	fl.oz.	15
Tincture of ambergris.....	fl.oz.	1

Sweet Pea Extract.

Essence of tuberose.....	fl.oz.	5
Essence of orange flowers.....	fl.oz.	5
Essence of rose.....	fl.oz.	5
Tincture of tonka.....	fl.oz.	2

Upper Ten Extract.

Tincture of vanilla.....	fl.oz.	4
Tincture of ambergris.....	fl.oz.	3
Stronger tincture of orris.....	fl.oz.	8
Compound spirit of rose.....	fl.oz.	3
Essence of orange flowers.....	fl.oz.	3
Oil of bergamot.....	fl.dr.	1½
Oil of lemon.....	drops	15

Verbena Extract.

I.

Essence of orange flowers.....	fl.oz.	3
Essence of tuberose.....	fl.oz.	3
Compound spirit of rose.....	fl.oz.	8
Spirit of lemon grass.....	fl.dr.	13½
Spirit of neroli.....	fl.dr.	10½
Oil of lemon.....	fl.dr.	5½
Oil of orange.....	fl.dr.	2¾
Alcohol.....	fl.oz.	3

II.

Oil of orange.....	drops	30
Spirit of lemon.....	fl.oz.	10
Spirit of lemon grass.....	fl.oz.	6

III.

Spirit of lemon.....	fl.oz.	2½
Spirit of lemon grass.....	fl.oz.	4
Stronger tincture of orris.....	fl.oz.	1
Alcohol.....	fl.oz.	8

IV.

Spirit of lemon.....	fl.oz.	10
Spirit of lemon grass.....	fl.oz.	6
Oil of orange.....	fl.dr.	10

Violet Extract.

I.

Essence of violet.....	fl.oz.	11
Essence of cassie.....	fl.oz.	2
Tincture of musk.....	fl.oz.	1
Stronger tincture of orris.....	fl.oz.	2

II.

Essence of cassie.....	fl.oz.	6
Essence of rose.....	fl.oz.	3
Essence of tuberose.....	fl.oz.	3
Stronger tincture of orris.....	fl.oz.	3
Spirit of almond.....	fl.oz.	1

III.

Essence of violet.....	fl.oz.	4¾
Essence of cassie.....	fl.dr.	2¾
Stronger tincture of orris.....	fl.dr.	3½
Spirit of almond.....	fl.dr.	1
Alcohol.....	fl.oz.	10½

IV.

Essence of cassie.....	fl.oz.	5
Essence of rose.....	fl.oz.	5
Essence of violet.....	fl.oz.	2½
Essence of tuberose.....	fl.oz.	2½

Violet de Parme Extract. (Parmese

Violet Extract.)

I.	
Essence of violet	fl.oz. 7
Essence of cassie	fl.oz. 4
Spirit of orris	fl.oz. 2
Compound spirit of rose	fl.oz. 1
Spirit of almond	fl.dr. ¾
Tincture of civet	fl.oz. ¼
Tincture of ambergris	fl.oz. ¼
Alcohol	fl.oz. 1

II.	
Essence of cassie	fl.oz. 2½
Essence of tuberose	fl.oz. 1½
Stronger tincture of orris	fl.oz. 3
Spirit of rose	fl.dr. 4
Spirit of almond	fl.dr. 2
Alcohol	fl.oz. 8

Violet (Wood) Extract.

I.	
Violet extract, No. II	fl.oz. 16
Oil of bitter almond	drops 15

II.	
Essence of violet	fl.dr. 13
Essence of cassie	fl.dr. 10
Essence of rose	fl.dr. 6½
Essence of tuberose	fl.dr. 6½
Stronger tincture of orris	fl.dr. 10
Spirit of almond	fl.dr. 1½
Alcohol	fl.oz. 9

III.	
Essence of violet	fl.oz. 8
Essence of cassie	fl.oz. 1
Essence of tuberose	fl.oz. 1
Tincture of vanilla	fl.dr. 9
Tincture of tonka	fl.dr. 2½
Tincture of musk	fl.dr. 6
Spirit of rose	fl.dr. 4
Spirit of bergamot	fl.dr. 4
Spirit of neroli	fl.dr. 4
Alcohol	fl.oz. 2½

Widow McPhelan Extract.

Essence of cassie	fl.oz. 2
Essence of violet	fl.oz. 1
Stronger tincture of orris	fl.oz. 3
Spirit of nutmeg	fl.dr. 5½
Spirit of pimento	fl.dr. 4½
Spirit of rose	fl.dr. 2
Spirit of cinnamon	m. 30
Ylang ylang extract No. II	fl.oz. 3
Alcohol	fl.oz. 6

Wild Olive Extract.

Essence of rose	fl.oz. 4
Essence of violet	fl.oz. 2
Essence of jasmine	fl.oz. 2
Essence of cassie	fl.oz. 1
Spirit of bergamot	fl.oz. 1
Spirit of rose	fl.dr. 2
Spirit of lavender	fl.dr. 2½
Alcohol, enough to make	fl.oz. 16

West End Extract.

I.	
Essence of jasmine	fl.oz. 1
Essence of cassie	fl.oz. 1
Stronger tincture of orris	fl.oz. 3
Tincture of musk	fl.oz. 2
Tincture of storax	fl.dr. 2
Spirit of rose	fl.dr. 4
Spirit of cedar	fl.dr. 5
Spirit of neroli	fl.dr. 4
Oil of verbena	drops 4
Benzoic acid	gr. 15
Alcohol, enough to make	fl.oz. 16

II.	
Essence of jasmine	fl.oz. 1
Essence of cassie	fl.oz. 1
Stronger tincture of orris	fl.oz. 3
Tincture of musk	fl.oz. 2
Tincture of storax	fl.dr. 2
Spirit of rose	fl.dr. 4
Spirit of cedar	fl.dr. 5
Spirit of neroli	fl.dr. 4
Oil of verbena	drops 4
Benzoic acid	gr. 15
Alcohol, enough to make	fl.oz. 16

Ylang Ylang Extract.

I.	
Spirit of ylang ylang	fl.oz. 8
Compound spirit of rose	fl.oz. 4
Essence of jasmine	fl.oz. 2
Tincture of civet	fl.oz. 2

II.	
Essence of jasmine	fl.dr. 21
Essence of tuberose	fl.dr. 14
Essence of orange flowers	fl.dr. 7
Spirit of ylang ylang	fl.dr. 11
Alcohol	fl.oz. 9½

III.	
Oil of ylang ylang	drops 15
Oil of neroli	drops 2
Oil of rose	drops 5
Oil of lemon	drops 2
Tincture of musk	fl.dr. ¼
Alcohol	fl.oz. 16

IV.	
Essence of jasmine	fl.oz. 2
Essence of violet	fl.oz. 2
Spirit of rose	fl.dr. 2
Spirit of ylang ylang	fl.oz. 5½
Tincture of civet	fl.oz. 2
Alcohol, enough to make	fl.oz. 16

V.	
Essence of jasmine	fl.oz. 2
Essence of rose	fl.oz. 4
Weaker tincture of orris	fl.oz. 6
Tincture of civet	fl.oz. 1
Oil of ylang ylang	fl.dr. 1
Alcohol	fl.oz. 4

Sachet Powders.

As is well known sachet powders are mixtures, in the form of moderately fine powder, which are to be inclosed in little sacks of cloth and placed with linen or wearing apparel, or stationery, etc. Sachets are preferred by some to "extracts," because there is no fear of using too much and thus making the user appear "loud" or vulgar. The objection to sachet powders is the want of permanency; they are liable to lose their odor even if carefully preserved, and the purchaser may therefore receive a sachet powder which can not be compared, in strength or delicacy, with a good "extract." For this reason sachet powders are frequently "freshened" by the addition of the corresponding "extract," viz., violet sachet by violet extract, etc.

Sachet powders are composed of two kinds of ingredients, viz., the "body" or vehicle, and the odorous agents. The first almost invariably contains orris root; this may be the only "body," or it may be combined with rose petals, orange peel, or lavender flowers, or a mixture of several of these. The odorous agents are the same as those employed in making "extracts." Remarks made with reference to the production of the latter will in a large measure apply to the sachet powders. For example, the best ingredients are required to make good sachet powders, whereas indifferent ingredients cannot but produce poor products. All such substances as orris, orange peel, etc., must be perfectly fresh and odorous, and the oils, etc., must be of superior quality.

In preparing sachet powders, the orris, rose petals, lavender flowers, and similar solid ingredients should be mixed and ground in a mill; the musk, civet, ambergris, vanilla, and tonka should be triturated to an intimate mixture with a portion of this powder; the solid resins or gum resins, like benzoin, should be contused in a mortar until reduced to moderately fine powder; all these ingredients should now be mixed, placed in a large mortar, the oils, tinctures, and other liquids added, and the whole mixed intimately by trituration. When the quantity of volatile oil is very small, it may be

advantageous first to dissolve in a small amount of alcohol.

Sachet powders should be preserved in rather small, well-stoppered bottles in a location of moderate temperature and be protected from light.

Cassie or Acacia Sachet.

Cassie flowers.....av.oz. 8
Orris root.....av.oz. 8

Pass each separately through a mill to reduce to tolerably fine powder, then mix, and pass through mill again, to reduce to finer powder.

Olive Pink Sachet.

Orris root.....av.oz. 8
Lavender flowers.....av.oz. 4
Patchouly leaves.....av.oz. 2
Cloves.....av.oz. 1
Deer tongue.....av.oz. 1
Pimento.....av.oz. $\frac{1}{2}$
Musk.....gr. 8
Oil of rose.....drops 40
Oil of neroli.....drops 48
Oil of sandalwood.....drops 80
Oil of lavender.....drops 40

Mix the first six ingredients, grind to a moderately fine powder, triturate the musk to an intimate mixture with a portion of this powder, add the remainder of the powder and the oils, and mix the whole thoroughly.

The deer tongue may be replaced by tonka if desired.

Essence Bouquet Sachet.

I.
Orange peel, recently dried...av.oz. 4
Sandalwood.....av.oz. 4
Rose petals.....av.oz. 4
Orris root.....av.oz. 4
Musk.....gr. 2
Coumarin.....gr. 4
Vanillin.....gr. 4
Oil of rose.....drops 12
Oil of bergamot.....drops 12
Oil of neroli.....drops 5
Oil of ylang ylang.....drops 5
Oil of rose geranium.....drops 4
Oil of cassia.....drops 5
Oil of bitter almond.....drops 3
Essence of jasmine.....fl.oz. 1

Mix the first four ingredients, grind to powder in a mill, triturate the musk, coumarin, and vanillin with a portion of the ground material, add to the remainder of the powder, now add the oils and essence, and again mix well.

II.

Orris powder.....	av.oz. 16
Musk.....	gr. 10
Oil of rose.....	fl.dr. 2
Oil of lemon.....	fl.dr. 1
Oil of bergamot.....	fl.dr. 4

Triturate the musk with a small portion of the orris until well mixed, add the remainder of the orris and the oils, and triturate to an intimate mixture.

Frangipanni Sachet.

I.

Orris root.....	av.oz. 8
Rose petals.....	av.oz. 8
Vanilla.....	av.oz. $\frac{1}{2}$
Benzoin.....	av.oz. $\frac{1}{2}$
Oil of lavender.....	fl.dr. 1
Oil of bergamot.....	fl.dr. 1
Oil of cassia.....	drops 24
Oil of pimento.....	drops 40
Oil of sandalwood.....	fl.dr. 2
Oil of neroli.....	fl.dr. 1
Oil of rose.....	drops 32

Grind the orris and rose separately to coarse powder, mix, pass through mill again to reduce to somewhat finer powder, triturate the vanilla to powder with a portion of this mixture, also reduce the benzoin to powder, mix the whole, add the oils, and triturate to an intimate mixture.

II.

Orris root.....	av.oz. 4
Rose petals.....	av.oz. 4
Wild thyme.....	av.oz. $1\frac{1}{2}$
Sassafras wood.....	av.oz. $\frac{1}{4}$
Orange peel, recently dried.....	av.oz. 8
Musk.....	gr. 1
Civet.....	gr. 1
Coumarin.....	gr. 3
Oil of rose.....	drops 6
Oil of sandalwood.....	drops 5
Oil of rose geranium.....	drops 5
Oil of bitter almond.....	drops 2
Essence of jasmine.....	fl.oz. 1

Prepare similar to essence bouquet sachet

No. II.

III.

Orris, powder.....	av.oz. 12
Vetivert.....	av.oz. 1
Sandalwood.....	av.oz. 1
Vanilla.....	av.oz. 1
Tonka beans.....	av.oz. $\frac{1}{2}$
Oil of neroli.....	drops 15
Oil of sandalwood.....	drops 10
Oil of bergamot.....	drops 15
Oil of rose geranium.....	drops 15
Oil of rose.....	drops 8
Tincture of musk.....	fl.dr. 2
Tincture of civet.....	fl.dr. 1

Prepare like the preceding.

Heliotrope Sachet.

I.

Rose petals.....	av.oz. $7\frac{1}{2}$
Orris root.....	av.oz. $3\frac{1}{2}$
Lavender flowers.....	av.oz. $3\frac{1}{2}$
Tonka beans.....	av.oz. 1
Benzoin.....	av.oz. $\frac{1}{2}$
Musk.....	gr. 20
Oil of bitter almond.....	drops 12
Oil of sandalwood.....	fl.dr. 2
Oil of neroli.....	drops 40

Prepare like the preceding.

II.

Orris.....	av.oz. 8
Red rose petals.....	av.oz. 4
Tonka.....	av.oz. 2
Vanilla.....	av.oz. 1
Musk.....	gr. 18
Oil of bitter almond.....	drops 2

Mix the first two ingredients and grind to powder in a mill; contuse the vanilla, tonka, and sufficient of the orris root together until the first two are reduced to a fine powder; triturate the musk with a portion of this powder, add the remaining ingredients, and mix the whole intimately in a mortar.

III.

Orris.....	av.oz. 4
Rose petals.....	av.oz. 4
Sandalwood.....	av.oz. $\frac{1}{2}$
Orange peel, recently dried.....	av.oz. $7\frac{1}{2}$
Heliotropin.....	gr. 1
Vanillin.....	gr. 2
Coumarin.....	gr. $\frac{1}{2}$
Tincture of ambergris.....	drops 6
Oil of rose.....	drops 12
Oil of rose geranium.....	drops 2
Oil of neroli.....	drops 8
Oil of ylang ylang.....	drop 1
Spirit of almond.....	fl.dr. 1
Essence of jasmine.....	fl.dr. 4

Reduce the first four ingredients to powder by grinding in a mill, add the other ingredients and mix well.—D.

Jockey Club Sachet.

I.

Lavender flowers.....	av.oz. 2
Rose petals.....	av.oz. 6
Orris.....	av.oz. 8
Vanilla.....	gr. 120
Musk.....	gr. 16
Essence of jasmine.....	fl.oz. 1
Oil of sandalwood.....	drops 80
Oil of neroli.....	drops 20
Oil of rose.....	drops 40

Reduce the first three ingredients to powder by grinding in a mill, contuse the vanilla with a portion of the ground mixture

to powder; also triturate the musk with a portion of the powder intimately, add the oils and essence, and mix the whole thoroughly by trituration in a mortar.

II.

Orris, powder	av.oz. 12
Sandalwood, ground	av.oz. 2
Oil of bergamot	fl.dr. 2
Oil of rose	drops 8
Tincture of musk	fl.dr. 4
Tincture of civet	fl.dr. 2

Mix the orris and sandal, add the other ingredients, and triturate until well mixed.

III.

Orris	av.oz. 4
Rose petals	av.oz. 4
Orange peel, recently dried	av.oz. 6½
Sandalwood	gr. 140
Cloves	gr. 35
Sumatra benzoin	gr. 375
Tincture of civet	drops 10
Tincture of musk	drops 5
Coumarin	gr. ½
Oil of rose	drops 7
Oil of bergamot	drops 10
Oil of rose geranium	drops 3
Oil of neroli	drops 2
Oil of cassia	drop 1
Oil of coriander	drop 1
Oil of bitter almond	drop 1
Oil of ylang ylang	drop 1
Essence of jasmine	fl.dr. 6

Mix the first four ingredients, reduce to powder by grinding in a mill, contuse the benzoin to powder, and then mix all the ingredients thoroughly by trituration in a mortar.—D.

Lavender Sachet.

I.

Lavender flowers	av.oz. 13
Benzoin	av.oz. 3
Oil of lavender	fl.dr. 1½

Reduce the lavender and benzoin each to powder, mix, add the oil, and triturate until well mixed.

II.

Lavender flowers	av.oz. 13
Benzoin	av.oz. 3
Oil of bergamot	fl.dr. 1¼
Oil of lavender	fl.dr. 2½

Prepare like the preceding.—H.

III.

Lavender flowers	av.oz. 16
Benzoin	av.oz. 1
Oil of lavender	fl.dr. 4
Tincture of musk	fl.dr. 4

Prepare like the preceding.

Marchale Sachet.

Sandalwood	av.oz. 4½
Orris	av.oz. 3½
Rose petals	av.oz. 3
Cloves	av.oz. 2½
Cassia bark	av.oz. 2¼
Tincture of musk	drop 1

Reduce the first five ingredients to moderately fine powder by grinding in a mill, add the tincture of musk and mix well by trituration.—H.

Millefleurs Sachet.

I.

Lavender flowers	av.oz. 3
Cloves	av.oz. 1
Cassia buds	av.oz. 1
Coriander	av.oz. 2
Benzoin	gr. 120
Nutmeg	gr. 120
Orris	av.oz. 8
Vanilla	av.oz. ½
Musk	gr. 20
Oil of rose	drops 20
Oil of neroli	drops 16
Oil of patchouly	drops 8
Oil of lavender (English)	drops 16
Oil of verbena	drops 8
Oil of sandalwood	drops 40

Contuse the orris and nutmeg, add the lavender, cloves, cassia, and coriander, grind all together in a mill to moderately fine powder, triturate the vanilla and musk each with a portion of this powder until well mixed, contuse the benzoin to powder, mix the whole, add the oils and mix all thoroughly by trituration.

II.

Lavender flowers	av.oz. 2½
Orris	av.oz. 2½
Rose petals	av.oz. 2½
Benzoin	av.oz. 2½
Tonka	av.oz. 2½
Vanilla	av.oz. ½
Sandalwood	av.oz. ¾
Cloves	av.oz. 1½
Cardamon	av.oz. ¾
Cassia bark	av.oz. ¾
Musk	gr. 7

Grind the lavender, orris, rose petals, sandal, cloves, cardamom, and cassia together in a mill to moderately fine powder, triturate the vanilla and tonka with a portion of this mixture until reduced to powder, also triturate the musk with another portion until well mixed, contuse the benzoin to fine powder, and mix the whole together thoroughly.—H.

III.

Lavender flowers.....	av.oz.	2½
Cassia flowers.....	av.oz.	2½
Rose petals.....	av.oz.	2½
Orris.....	av.oz.	5
Sandalwood.....	av.oz.	1¼
Cloves.....	gr.	185
Cinnamon.....	gr.	185
Benzoin.....	gr.	270
Tonka.....	gr.	270
Vanilla.....	gr.	200
Tincture of civet.....	m.	40
Tincture of musk.....	m.	40
Oil of bergamot.....	m.	40
Oil of rose geranium.....	drops	5
Oil of patchouly.....	drops	2

Mix the first seven ingredients, grind together in a mill to moderately fine powder, contuse the benzoin to fine powder, triturate the vanilla and tonka with some of the ground material to fine powder, mix all three, add tinctures and oils, and mix the whole intimately by trituration in a mortar,

Musk Sachet.

Oil of rose.....	drops	2
Ammonium carbonate.....	gr.	6
Musk.....	gr.	18
Orris, powder.....	av.oz.	16

Mix intimately. The proportions may be altered if desired.

New Mown Hay Sachet.

I.

Orris.....	av.oz.	4
Rose petals.....	av.oz.	4
Orange flowers.....	av.oz.	2
Musk seed.....	av.oz.	2
Tonka.....	av.oz.	2
Benzoin.....	gr.	290
Oil of verberna.....	drops	15
Oil of bitter almond.....	drops	15

Grind the orris, rose petals, orange flowers, and musk seed together in a mill to moderately fine powder, triturate the tonka with a portion of this to fine powder, also contuse the benzoin to powder, mix all, add the oils, and mix the whole intimately by trituration.

II.

Orris, powder.....	av.oz.	18
Tonka.....	av.oz.	1½
Vanilla.....	av.oz.	1½
Oil of bitter almond.....	drops	2
Oil of rose geranium.....	drops	24
Oil of rose.....	drops	6
Oil of bergamot.....	drops	12
Tincture of musk.....	fl.dr.	2½

Triturate the tonka and vanilla with the orris to fine powder, add the oils and tincture, and mix well by trituration.

III.

Deer tongue leaves.....	av.oz.	8
Orris.....	av.oz.	4
Orange flowers.....	av.oz.	4
Rose petals.....	av.oz.	½

Mix and grind to moderately fine powder in a mill.

Opoponax Sachet.

Orris.....	av.oz.	8
Rose petals.....	av.oz.	2½
Cassia flowers.....	av.oz.	2½
Tonka.....	gr.	290
Vanilla.....	av.oz.	½
Musk.....	gr.	75
Oil of citronella.....	drops	3
Oil of lemon.....	drops	5
Oil of bergamot.....	drops	20
Oil of patchouly.....	drops	5
Oil of rose geranium.....	drops	10
Oil of rose.....	drop	1
Tincture of civet.....	m.	40

Mix the first three ingredients, grind to moderately fine powder in a mill, triturate the vanilla and the tonka with a portion of this powder until a fine mixture is produced, add the remainder of the ground mixture, the oils and the tincture, and mix well by trituration.

Oriental Sachet.

Orris.....	av.oz.	2½
Calamus.....	av.oz.	2½
Sandalwood.....	av.oz.	1¼
Rosewood.....	av.oz.	1¼
Cloves.....	gr.	270
Cassia.....	gr.	270
Orange peel, recently dried.....	av.oz.	2½
Rose petals.....	av.oz.	2½
Musk seed.....	av.oz.	1¼
Benzoin.....	gr.	270
Myrrh.....	gr.	270
Tincture of ambergris.....	m.	20

Mix all but the myrrh, benzoin, and tincture; grind to moderately fine powder, contuse the benzoin and myrrh to powder, mix all, add the tincture of ambergris, and triturate until well mixed.

Patchouly Sachet.

I. Patchouly herb.....	av.oz.	8
Lavender flowers.....	av.oz.	8
Orris.....	av.oz.	2
Cloves.....	av.oz.	1
Oil of bergamot.....	fl.dr.	1
Oil of patchouly.....	drops	2
Tincture of ambergris.....	fl.dr.	½
Tincture of musk.....	fl.dr.	½

Mix the first four ingredients, grind to moderately fine powder in a mill, add the other ingredients and mix well.

to powder; also triturate the musk with a portion of the powder intimately, add the oils and essence, and mix the whole thoroughly by trituration in a mortar.

II.

Orris, powder	av.oz.	12
Sandalwood, ground	av.oz.	2
Oil of bergamot	fl.dr.	2
Oil of rose	drops	8
Tincture of musk	fl.dr.	4
Tincture of civet	fl.dr.	2

Mix the orris and sandal, add the other ingredients, and triturate until well mixed.

III.

Orris	av.oz.	4
Rose petals	av.oz.	4
Orange peel, recently dried	av.oz.	6 3/4
Sandalwood	gr.	140
Cloves	gr.	85
Sumatra benzoin	gr.	875
Tincture of civet	drops	10
Tincture of musk	drops	5
Coumarin	gr.	1
Oil of rose	drops	7
Oil of bergamot	drops	10
Oil of rose geranium	drops	8
Oil of neroli	drops	2
Oil of cassia	drop	1
Oil of coriander	drop	1
Oil of bitter almond	drop	1
Oil of ylang ylang	drop	1
Essence of jasmine	fl.dr.	6

Mix the first four ingredients, reduce to powder by grinding in a mill, contuse the benzoin to powder, and then mix all the ingredients thoroughly by trituration in a mortar.—D.

Lavender Sachet.

I.

Lavender flowers	av.oz.	13
Benzoin	av.oz.	8
Oil of lavender	fl.dr.	1 1/2

Reduce the lavender and benzoin each to powder, mix, add the oil, and triturate until well mixed.

II.

Lavender flowers	av.oz.	13
Benzoin	av.oz.	8
Oil of bergamot	fl.dr.	1 1/4
Oil of lavender	fl.dr.	2 1/2

Prepare like the preceding.—H.

III.

Lavender flowers	av.oz.	16
Benzoin	av.oz.	1
Oil of lavender	fl.dr.	4
Tincture of musk	fl.dr.	4

Prepare like the preceding.

Marechale Sachet.

Sandalwood	av.oz.	4 1/2
Orris	av.oz.	3 1/4
Rose petals	av.oz.	8
Cloves	av.oz.	2 1/4
Cassia bark	av.oz.	2 1/4
Tincture of musk	drop	1

Reduce the first five ingredients to moderately fine powder by grinding in a mill, add the tincture of musk and mix well by trituration.—H.

Millefleurs Sachet.

I.

Lavender flowers	av.oz.	3
Cloves	av.oz.	1
Cassia buds	av.oz.	1
Coriander	av.oz.	2
Benzoin	gr.	120
Nutmeg	gr.	120
Orris	av.oz.	8
Vanilla	av.oz.	1
Musk	gr.	20
Oil of rose	drops	20
Oil of neroli	drops	16
Oil of patchouly	drops	8
Oil of lavender (English)	drops	16
Oil of verbena	drops	8
Oil of sandalwood	drops	40

Contuse the orris and nutmeg, add the lavender, cloves, cassia, and coriander, grind all together in a mill to moderately fine powder, triturate the vanilla and musk each with a portion of this powder until well mixed, contuse the benzoin to powder, mix the whole, add the oils and mix all thoroughly by trituration.

II.

Lavender flowers	av.oz.	2 1/2
Orris	av.oz.	2 1/2
Rose petals	av.oz.	2 1/2
Benzoin	av.oz.	2 1/2
Tonka	av.oz.	2 1/2
Vanilla	av.oz.	1
Sandalwood	av.oz.	3/4
Cloves	av.oz.	1 1/4
Cardamon	av.oz.	3/4
Cassia bark	av.oz.	3/4
Musk	gr.	7

Grind the lavender, orris, rose petals, sandal, cloves, cardamom, and cassia together in a mill to moderately fine powder, triturate the vanilla and tonka with a portion of this mixture until reduced to powder, also triturate the musk with another portion until well mixed, contuse the benzoin to fine powder, and mix the whole together thoroughly.—H.

III.

Lavender flowers.....	av.oz.	2½
Cassia flowers.....	av.oz.	2½
Rose petals.....	av.oz.	2½
Orris.....	av.oz.	5
Sandalwood.....	av.oz.	1¼
Cloves.....	gr.	135
Cinnamon.....	gr.	135
Benzoin.....	gr.	270
Tonka.....	gr.	270
Vanilla.....	gr.	200
Tincture of civet.....	m.	40
Tincture of musk.....	m.	40
Oil of bergamot.....	m.	40
Oil of rose geranium.....	drops	5
Oil of patchouly.....	drops	2

Mix the first seven ingredients, grind together in a mill to moderately fine powder, contuse the benzoin to fine powder, triturate the vanilla and tonka with some of the ground material to fine powder, mix all three, add tinctures and oils, and mix the whole intimately by trituration in a mortar,

Musk Sachet.

Oil of rose.....	drops	2
Ammonium carbonate.....	gr.	6
Musk.....	gr.	18
Orris, powder.....	av.oz.	16

Mix intimately. The proportions may be altered if desired.

New Mown Hay Sachet.

I.

Orris.....	av.oz.	4
Rose petals.....	av.oz.	4
Orange flowers.....	av.oz.	2
Musk seed.....	av.oz.	2
Tonka.....	av.oz.	2
Benzoin.....	gr.	290
Oil of verbena.....	drops	15
Oil of bitter almond.....	drops	15

Grind the orris, rose petals, orange flowers, and musk seed together in a mill to moderately fine powder, triturate the tonka with a portion of this to fine powder, also contuse the benzoin to powder, mix all, add the oils, and mix the whole intimately by trituration.

II.

Orris, powder.....	av.oz.	13
Tonka.....	av.oz.	1½
Vanilla.....	av.oz.	1½
Oil of bitter almond.....	drops	2
Oil of rose geranium.....	drops	24
Oil of rose.....	drops	6
Oil of bergamot.....	drops	12
Tincture of musk.....	fl.dr.	2½

Triturate the tonka and vanilla with the orris to fine powder, add the oils and tincture, and mix well by trituration.

III.

Deer tongue leaves.....	av.oz.	8
Orris.....	av.oz.	4
Orange flowers.....	av.oz.	4
Rose petals.....	av.oz.	½

Mix and grind to moderately fine powder in a mill.

Opoponax Sachet.

Orris.....	av.oz.	8
Rose petals.....	av.oz.	2½
Cassia flowers.....	av.oz.	2½
Tonka.....	gr.	290
Vanilla.....	av.oz.	½
Musk.....	gr.	75
Oil of citronella.....	drops	3
Oil of lemon.....	drops	5
Oil of bergamot.....	drops	20
Oil of patchouly.....	drops	5
Oil of rose geranium.....	drops	10
Oil of rose.....	drop	1
Tincture of civet.....	m.	40

Mix the first three ingredients, grind to moderately fine powder in a mill, triturate the vanilla and the tonka with a portion of this powder until a fine mixture is produced, add the remainder of the ground mixture, the oils and the tincture, and mix well by trituration.

Oriental Sachet.

Orris.....	av.oz.	2½
Calamus.....	av.oz.	2½
Sandalwood.....	av.oz.	1¼
Rosewood.....	av.oz.	1¼
Cloves.....	gr.	270
Cassia.....	gr.	270
Orange peel, recently dried.....	av.oz.	2½
Rose petals.....	av.oz.	2½
Musk seed.....	av.oz.	1¼
Benzoin.....	gr.	270
Myrrh.....	gr.	270
Tincture of ambergris.....	m.	20

Mix all but the myrrh, benzoin, and tincture; grind to moderately fine powder, contuse the benzoin and myrrh to powder, mix all, add the tincture of ambergris, and triturate until well mixed.

Patchouly Sachet.

I. Patchouly herb.....	av.oz.	8
Lavender flowers.....	av.oz.	3
Orris.....	av.oz.	2
Cloves.....	av.oz.	1
Oil of bergamot.....	fl.dr.	1
Oil of patchouly.....	drops	2
Tincture of ambergris.....	fl.dr.	½
Tincture of musk.....	fl.dr.	½

Mix the first four ingredients, grind to moderately fine powder in a mill, add the other ingredients and mix well.

II.

Patchouly leaves.....	av.oz. 12
Orris.....	av.oz. 8
Oil of patchouly.....	drops 12
Oil of rose geranium.....	drops 12

Mix the patchouly and orris, grind together in a mill to moderately fine powder, add the other ingredients and mix well.

III.

Patchouly herb.....	av.oz. 10
Orris.....	av.oz. 5
Rosewood.....	av.oz. 1½
Benzoin.....	av.oz. 1½
Oil of patchouly.....	fl.dr. ½
Oil of rose.....	drops 5

Mix the first three ingredients, grind together in a mill to moderately fine powder, contuse the benzoin to powder, add to the previous mixture, to the whole add the oils, and mix intimately.

Rondeletia Sachet.

Orris.....	av.oz. 12
Lavender flowers.....	av.oz. 6
Cloves.....	gr. 60
Musk.....	gr. 12
Tincture of ambergris.....	fl.dr. 2
Oil of rose geranium.....	drops 8
Oil of bergamot.....	drops 80
Oil of cloves.....	drops 80
Oil of lavender.....	drops 80
Oil of rose.....	drops 5

Mix the first three ingredients, grind to moderately fine powder in a mill, triturate the musk with a portion of this powder until well mixed, add this to the remainder of the powder, then add the oils and tincture, and mix the whole thoroughly.

Rose Sachet.

I. Rose petals.....	av.oz. 16
Oil of rose geranium.....	drops 80
Oil of rose.....	drops 80
Tincture of ambergris.....	drops 20
Tincture of musk.....	drops 10

Grind the rose petals to moderately fine powder, add the other ingredients, and mix thoroughly.

II.

Orris.....	av.oz. 8
Rose petals.....	av.oz. 8
Sandalwood.....	av.oz. 1½
Patchouly herb.....	gr. 270
Tincture of civet.....	m. 80
Oil of rose geranium.....	drops 10
Oil of rose.....	drops 7

Mix the orris, rose petals, sandal, and patchouly, grind to moderately fine powder in a mill, add the other ingredients and mix well.

Sweet Brier Sachet.

Orris, ground.....	av.oz. 18
Sandalwood; ground.....	av.oz. 8
Oil of rose geranium.....	drops 6
Oil of neroli.....	drops 12
Oil of verbena.....	drops 24
Oil of bergamot.....	drops 8
Oil of lemon.....	drops 12
Oil of rose.....	drops 6
Tincture of ambergris.....	m. 45
Tincture of musk.....	m. 45

Mix the whole thoroughly.

Verbena Sachet.

Orris, ground.....	av.oz. 16
Oil of bergamot.....	m. 40
Oil of verbena.....	fl.dr. 1
Oil of rose geranium.....	drops 10
Tincture of musk.....	m. 80

Mix the whole thoroughly.

Violet Sachet.

Orris, ground.....	av.oz. 16
Oil of bergamot.....	drops 10
Oil of bitter almonds.....	drops 7
Oil of rose.....	drops 7
Tincture of musk.....	fl.dr. 2½

Mix the whole thoroughly.

Wild Flowers Sachet.

Canada snake root.....	av.oz. 4
Coriander.....	av.oz. 3
Deer tongue.....	av.oz. 2
Lavender flowers.....	av.oz. 2
Sweet flag root.....	av.oz. ½
Patchouly leaves.....	av.oz. 1
Nutmeg.....	av.oz. ½
Oil of bergamot.....	fl.dr. 2½
Oil of neroli.....	drops 40
Oil of sandalwood.....	drops 80
Oil of verbena.....	drops 20
Oil of patchouly.....	drops 20
Essence of jasmine.....	fl.dr. 1

Break the nutmeg into small pieces, mix with first seven ingredients, grind the whole in a mill to moderately fine powder, add the remaining ingredients, and mix thoroughly.

Ylang Ylang Sachet.

I.

Orris.....	av.oz. 5
Rose petals.....	av.oz. 5
Orange peel, recently dried.....	av.oz. 6½
Coumarin.....	gr. 1
Vanillin.....	gr. 2
Tincture of civet.....	drops 48
Tincture of musk.....	drops 24
Oil of ylang ylang.....	drops 12
Oil of rose.....	drops 8
Oil of bergamot.....	drops 4
Essence of jasmine.....	fl.dr. 8

Mix the first three ingredients, reduce to moderately fine powder in a mill, dissolve the

coumarin and vanillin in the remaining ingredients, and mix the whole thoroughly.

II.

Orris	av.oz.	8
Rose petals	av.oz.	2½
Cassie flowers	av.oz.	2½
Pimento	gr.	280
Tonka	gr.	140
Vanilla	gr.	140
Benzoin	gr.	70
Oil of pimento	drops	10
Oil of bergamot	drops	20
Oil of rose geranium	drops	10
Oil of ylang ylang	drops	20
Oil of rose	drops	30
Tincture of musk	fl.dr.	1¼
Tincture of civet	drops	40

Mix the first four ingredients, grind to moderately fine powder in a mill, triturate the tonka and vanilla with a solution of this mixture to powder, contuse the benzoin to powder, mix all, add the oils and tinctures, and mix the whole thoroughly.

III.

Orris, ground	av.oz.	15
Benzoin	av.oz.	½
Musk	gr.	110
Oil of ylang ylang	drops	30
Oil of rose	drops	15

Contuse the benzoin to powder, triturate the musk intimately with a portion of the orris, add the remainder of the orris, the benzoin, and the oils, and mix the whole thoroughly.

Solid Perfumes.

The novelty sold under this name is prepared by melting paraffin in a water bath, adding odorous substances when nearly cool, and molding into small tablets. The following formulas may be employed in preparing them, each of the mixtures given being sufficient for 4 av.ounces of paraffin.

I.

Oil of lavender	fl.dr.	2
Oil of cloves	fl.dr.	1
Oil of rose geranium	m.	20
Oil of bergamot	fl.dr.	2
Vanillin	gr.	10

II.

Oil of neroli	fl.dr.	½
Oil of rose geranium	fl.dr.	½
Oil of lavender	fl.dr.	½
Oil of bergamot	fl.dr.	1
Oil of cloves	drops	2
Heliotropin	gr.	10

III.

Oil of linaloe	fl.dr.	2
Oil of bergamot	m.	20
Oil of lemon	m.	20
Heliotropin	gr.	20

IV.

Oil of ylang ylang	fl.dr.	2
Oil of neroli	fl.dr.	1
Oil of sandalwood	fl.dr.	½
Coumarin	gr.	20
Tincture of musk	m.	20

V.

Oil of bergamot	fl.dr.	4
Oil of rose geranium	m.	20
Oil of neroli	m.	30
Oil of lemon	fl.dr.	1
Oil of orange	fl.dr.	1
Oil of rosemary	m.	20
Oil of lavender	m.	20

These tablets are intended to replace sachet powders.

Pot Pourris.

These are mixtures of odorous substances, in rather coarse condition, to be placed in open jars and intended for scenting rooms. The individual particles should be of about the size of a split pea, and such substances as orris, benzoin, etc., should be reduced to this size by appropriate means. In making good pot pourri mixtures, the best materials are required.

Extra perfume, such as an "extract," may be added to these pot pourris if desired.

I.

Lavender flowers	av.oz.	4
Orris	av.oz.	4
Rose petals	av.oz.	4
Cloves	av.oz.	1
Cinnamon	av.oz.	1
Siam benzoin	av.oz.	1
Pimento	av.oz.	1
Table salt	av.oz.	2
Vanilla	av.oz.	¾
Musk	gr.	100¾
Oil of bergamot	drops	30
Oil of lemon	drops	30
Oil of lavenderflowers	drops	15
Oil of sandalwood	drops	15
Oil of rose geranium	drops	15
Oil of rose	drops	2½
Tincture of ambergris	fl.dr.	¾

Reduce the orris, rose petals, cloves, cinnamon, benzoin, pimento and vanilla to particles of suitable size, add the lavender, salt and musk, and then the oils, and tincture and mix well.

II. To 1 pint of rose petals, add:

Orris.....	av.oz.	2
Pimento.....	gr.	220
Cloves.....	gr.	220
Cascarilla.....	gr.	110
Musk.....	gr.	2
Oil of rose.....	drops	2

Prepare like the preceding.

III.

Sandalwood.....	av.oz.	6
Orris.....	av.oz.	6
Benzoin.....	av.oz.	1
Cloves.....	av.oz.	1
Tonka.....	av.oz.	1
Mace.....	av.oz.	1/2
Musk.....	gr.	20
Oil of rose.....	drops	20
Oil of lavender.....	drops	80
Oil of bergamot.....	fl.dr.	1
Oil of lemon.....	fl.dr.	1

Prepare like the preceding.

IV.

Rose petals.....	oz.	4
Lavender flowers.....	oz.	8
Vanilla.....	gr.	60
Cloves.....	gr.	60
Storax.....	gr.	60
Benzoin.....	gr.	60
Ambergris.....	gr.	20
Oil of rose.....	drops	20

Prepare like the preceding.

Fumigating Pastilles.

These are cone-shaped bodies produced by mixing red saunders or wood charcoal with potassium nitrate, odorous substances, and mucilage, and forming a mass. By the use of charcoal, black pastilles are obtained, while saunders produces the red variety.

When heated, these pastilles emit a pleasant odor; they are employed for this odor and for preventing and removing disease germs or foul odors caused by disease. That they are of any use except to produce a pleasant odor is doubtful.

The pastille mass may be formed into cones by means of a pastille machine, or by means of the hand similarly to the handmade suppositories.

I.

Benzoin.....	av.oz.	10
Charcoal.....	av.oz.	24
Potassium nitrate.....	av.oz.	1
Sassafras.....	av.oz.	2
Mucilage of acacia.....	sufficient	

Mix the first four in fine powder, add the mucilage, form a mass, and make into conical pastilles.

II.

Potassium nitrate.....	gr.	875
Water.....	fl.oz.	25
Charcoal wood, powder.....	av.oz.	80
Tragacanth, powder.....	gr.	875
Storax.....	gr.	800
Benzoin.....	gr.	800
Vanillin.....	gr.	8
Coumarin.....	gr.	8
Musk.....	gr.	8
Civet.....	gr.	1 1/2
Oil of rose.....	drops	20
Oil of bergamot.....	drops	15
Oil of ylang ylang.....	drops	10
Oil of rhodium.....	drops	10
Oil of sandalwood.....	drops	5
Oil of cinnamon.....	drops	5
Oil of orris.....	drop	1
Oil of cascarilla.....	drop	1

Saturate the charcoal with the potassium nitrate dissolved in the water, dry the mass, powder, add the other ingredients and mix thoroughly. Beat the mixture to a plastic mass with the addition of sufficient mucilage of tragacanth containing 2 per cent of saltpeter in solution, and form into cone-shaped pastilles. In order to evenly distribute the storax throughout the mass, it may be previously dissolved in a small amount of acetic ether.—D.

III.

Benzoin.....	av.oz.	2
Cascarilla.....	av.oz.	1
Myrrh.....	av.oz.	1
Potassium nitrate.....	av.oz.	1/2
Potassium chlorate.....	gr.	60
Charcoal, wood.....	av.oz.	4
Oil of cloves.....	fl.dr.	1
Oil of cinnamon.....	fl.dr.	1
Oil of lavender.....	fl.dr.	1
Mucilage of tragacanth.....	sufficient	

Mix the first six ingredients previously reduced to fine powder, add the oils, and then incorporate enough mucilage to form a mass. Divide this into pastilles weighing about 60 gr. and dry.

IV.

Charcoal, powder.....	av.oz.	80
Potassium nitrate.....	av.oz.	1/2
Water.....	fl.oz.	83
Tragacanth, powder.....	gr.	800
Tincture of benzoin.....	fl.oz.	1 1/2
Peru balsam.....	gr.	800
Storax, crude.....	gr.	800
Tolu balsam.....	gr.	800
Oleo-balsamic mixture.....	fl.dr.	2 1/2
Coumarin.....	gr.	8

Saturate the charcoal with the potassium nitrate dissolved in the water, then dry,

when the vessel is to be removed from the fire, and the whole allowed to cool down. Lastly, the bottles are sealed by dipping the top in melted sealing wax.

Fruit Pulp.

To prepare fruit pulp take a quantity of thoroughly ripe fruit; rub and press it to a pulp through a hair sieve into earthen or stoneware pans; add a quarter of a pound of white granulated sugar to each pound of pulp; mix thoroughly; fill the bottle to the neck; cork and tie down with wire; place them in a boiler of cold water as above directed; put over the fire; boil gently for 20 minutes; when cold seal the corks and put the bottles in a cool place, laying them sideways.

Ginger Ale.

Soluble essence of ginger.....	fl.oz. 6
Citric acid.....	av.oz. 1½
Spirit of lemon.....	fl.dr. 2
Caramel.....	av.oz. 1
Syrup.....	fl.oz. 56

This is sufficient for a 10-gallon fountain.

Lemonade Seltzer.

Juice of 1 lemon.....	
Sugar.....	4 teaspoonfuls
Cracked ice.....	sufficient
Water.....	fl.oz. 1

Mix, shake, strain and fill soda glass with seltzer water. Serve with straws.

Phosphate, Wild Cherry.

I.	
Cherry juice.....	fl.oz. 4
Syrup of wild cherry.....	fl.oz. 4
Syrupy glucose.....	fl.oz. 6
Diluted phosphoric acid.....	fl.oz. 2
Oil of bitter almonds.....	drops 2

II.	
Oil of bitter almonds.....	drops 2
Alcohol.....	fl.dr. 1
Diluted phosphoric acid.....	fl.oz. 2
Simple syrup.....	fl.oz. 8
Syrupy glucose.....	fl.oz. 6
Caramel.....	sufficient to color

Root Beer.

I.	
Fluid extract sarsaparilla.....	fl.dr. 10
Fluid extract of pipsissewa.....	fl.dr. 10
Fluid extract of wintergreen.....	fl.dr. 4
Fluid extract of licorice.....	fl.dr. 4
Oil of wintergreen.....	drops 48
Oil of sassafras.....	drops 24
Oil of cloves.....	drops 12
Alcohol.....	fl.oz. 10

24

This makes a root beer "extract" which may be mixed with syrup, or it may be diluted with 9 gallons of water containing 1 gallon of refined molasses, and charged in a fountain. If it is preferred to use a fermented article, add the water and molasses, using warm water, also 1 quart yeast, and keep in a warm place until fermentation is complete.

II.

Sassafras.....	av.oz. 4
Yellow dock.....	av.oz. 4
Pimento.....	av.oz. 4
Wintergreen.....	av.oz. 4
Wild cherry bark.....	av.oz. 2
Coriander seed.....	av.oz. 2
Hops.....	av.oz. 1

Reduce to powder and percolate with a menstruum composed of 8 volumes of alcohol and 5 volumes of water until 48 fluid-ounces of liquid have passed. Of this half-strength fluid extract 2 fluidounces are sufficient to make 1 gallon of root beer. Or, exhaust the above drugs with the menstruum indicated, add enough water to make 6 gallons, and start fermentation with 1 pint of yeast.

III.

Sarsaparilla.....	av.oz. 1½
Sassafras.....	av.oz. 2½
Wild cherry bark.....	av.oz. 2½
Wintergreen bark.....	av.oz. 2½

Mix with 5 gallons of lukewarm water, add 4 fluidounces of molasses and 2½ fluid-ounces of fresh yeast, and allow fermentation to proceed, then draw off and bottle.

IV. In a suitable vessel place 300 grains each of pipsissewa, dandelion, sassafras, American sarsaparilla, Jamaica ginger, and hops; add 3 gallons of boiling water and keep covered and hot, but not boiling, for 8 hours; cool partially; strain through a cloth and add 5 pounds of white or coffee sugar (or 5 pints of molasses or syrup) to the colature. When dissolved transfer to a large jar and make up to 5 gallons with water. Add one-half pint fresh brewer's yeast (or sufficient compressed yeast), stir, allow to remain in a moderately warm place, and in from 24 to 72 hours it will be fit for use. The beaten white of 1 egg or a little isinglass is often employed for clarification.

Soda Foam. (Gum Foam.)

By the title "soda foam," or the more improper term "gum foam," is meant a liquid to be added to syrups, so that when mixed with carbonated ("soda") water, a certain proportion of gas will be retained in the mixture in the desirable form of foam. Different substances are used in these "foams," and these vary in their gas-retaining or foam-holding qualities. Among the more common substances used in "foams" are gelatin, white of egg, and quillaja tincture.

If gelatin be used, it must be dissolved in the water used in making plain syrup. About one-half av.ounce will be sufficient for 1 gallon of syrup.

In using albumen, the white of 1 egg should be added to 16 fluidounces of water, stirring well, and straining. Or one-half of the water may be replaced by simple syrup. This mixture decomposes very quickly, and should be preserved on ice, or, better yet, it should be prepared only as required.

Quillaja may be used in the form of a tincture which may be prepared as follows:

Quillaja, fine chips.....av.oz. 4
Alcohol.....fl.oz. 8
Water.....sufficient

Mix the drug with 16 fluidounces of water, boil for 15 minutes, strain, and add enough water through the strainer to make the colature measure 16 fluidounces. Mix the liquid, when cool, with the alcohol, let stand for 12 hours, filter, and to the filtrate add enough water to make it measure 24 fluidounces.

If a cheaper preparation is desired, the alcohol may be replaced by water. The product, which is just as efficient, as a "soda foam" as the preceding, may be preserved by the addition of a small amount of salicylic acid.

One fluidounce of this preparation is required as a "foam" for 1 gallon of syrup.

Solution of Acid Phosphates.**I.**

Bone ash, powder.....av.oz. 8
Sulphuric acid, concentrated.....av.oz. 8
Water.....sufficient

Mix the bone ash with 8 fluidounces of water, add the acid previously diluted with

16 fluidounces of water, mix thoroughly with a porcelain or glass stirrer, add enough water to make the whole weigh 82 av.ounces, and set the mixture aside for 24 hours, agitating occasionally. Then transfer the mixture to a strong muslin strainer, and subject this to pressure, avoiding contact with metals, so as to express as much liquid as possible. Lastly, filter the liquid through paper.

The acid used in this preparation may be the commercial variety, provided it is free from arsenic, and of a specific gravity not less than 1.83.—N. F.

II.

Calcium carbonate, precipitated...gr. 369
Magnesia, calcined.....gr. 116
Potassium carbonate.....gr. 151
Phosphoric acid, U. S. P., or
85 per cent.....fl.oz. 3½
Water, enough to make.....fl.oz. 16

Mix the acid with 8 fluidounces of water, add the calcium carbonate gradually with constant stirring. When effervescence has ceased, add the magnesia in the same way, and then the potassium carbonate. Finally add the rest of the water, stir well and filter.

Solution of Citric Acid. (Fruit Acid.)**I.**

Citric acid.....av.oz. 8
Water, enough to make.....fl.oz. 16
Dissolve and filter.

II.

Citric acid.....av.oz. 8
Alcohol.....fl.oz. 2
Water, enough to make.....fl.oz. 16
Dissolve and filter.

Spirit of Nutmeg.

Oil of nutmeg.....fl.dr. 4
Alcohol.....fl.oz. 9½

Syrup.

Simple or plain syrup for soda fountain use, or "soda syrup" as it is frequently called, is made of different strengths depending upon the peculiar ideas or notions of the pharmacists. Some use 10 av.pounds to 1 gallon of water, others again use the regular simple syrup of the pharmacopœia, but the most common formula in vogue is the following:

Sugar.....av.lbs. 12
Water.....gal. 1

Of course, only the purest granulated sugar should be used. It may be dissolved in the

water by means of heat or by the process of percolation which is now so largely employed in making medicinal syrups.

If the heat process be preferred, the water and sugar should positively not be mixed before applying heat, as scorching of the sugar may occur, thus imparting to the product a certain disagreeable taste which is highly objectionable to a discriminating and delicate palate.

The percolation process should be preferred for making this preparation, as it is much more cleanly, it is constant, and requires but little supervision. Any amount may be made by having a large percolator or several percolators, which may be replenished with sugar and water as required. These percolators should be mounted in a substantial rack; a convenient receptacle for the syrup for ordinary drug store use is a clean glycerin can.

In a few instances it may be found that the density of the above syrup is too low; the U. S. P. syrup must then be used.

Syrup, Ambrosia.

Port wine	.....fl.oz.	16
Lemon syrup	.....fl.oz.	16
Raspberry syrup	.....fl.oz.	32
Soda foam	.....sufficient	

Syrup, Birch.

Birch essence	.....fl.oz.	2
Oil of sassafras	.....drops	2
Syrup, enough to make	.....fl.oz.	64
Soda foam	.....sufficient	

Syrup, Catawba.

Simple syrup, U. S. P.	.....fl.oz.	16
Catawba wine	.....fl.oz.	16
Soda foam	.....sufficient	

Syrup, Cherry.

Cherry juice	.....pint	1
Syrup	.....pints	7
Fruit acid	.....fl.dr.	4
Soda foam	.....sufficient	

Syrup, Wild Cherry.

Wild cherry bark	.....av.oz.	1
Glycerin	.....fl.oz.	1
Sugar	.....av.oz.	6
Water	.....sufficient	

Reduce the wild cherry bark to No. 20 powder. Mix the glycerin with 4 fluid-ounces of water and moisten the powder with sufficient of the liquid, macerate for 24

hours in a close vessel, then percolate and pour on water until the percolate measures 12 fluidounces, add the sugar and when dissolved strain, add half fluidounce of fruit acid and sufficient water to make 1 pint. This can be dispensed as cherry phosphate, by making an addition of solution of acid phosphate when it is drawn.

Syrup, Chocolate.

I.

Cacao, powder	.....av.oz.	2
Water	.....fl.oz.	32
Sugar	.....av.oz.	52
Extract of vanilla	.....fl.dr.	4

Triturate the cacao in a mortar with a portion of the water to a smooth paste, add the remainder of the water, then the sugar, heat the whole in a suitable vessel with-constant stirring until it nearly reaches the boiling point, then strain through a fine sieve, and when cold, add the vanilla extract.

II.

Chocolate powder	.....av.oz.	4
Sugar	.....av.oz.	52
Extract of vanilla	.....fl.dr.	6
Water, boiling	.....fl.oz.	24

Mix the chocolate and sugar, triturate the mixed powders with the boiling water added slowly and strain; when cool, add the vanilla extract.

Syrup, Coffee.

I.

Mocha coffee	.....av.oz.	2
Java coffee	.....av.oz.	2
Sugar	.....av.oz.	60
Soda foam,		
Water	.....of each,	sufficient

The coffee should be fresh roasted, of the very best quality, and be ground to fine powder. Heat it in a vessel with 16 fluidounces of water to boiling, and boil for 1 minute, set the mixture aside for several minutes, then filter through a double filter, and add gradually hot or nearly boiling water, until the filtrate measures 32 fluidounces. In this filtrate dissolve the sugar by percolation.

II.

Mocha coffee	.....av.oz.	2
Java coffee	.....av.oz.	6
Sugar	.....av.oz.	56
Water, enough to make	.....fl.oz.	64
Soda foam	.....sufficient	

Mix the previously roasted and finely ground coffee, add 32 fluidounces of water,

macerate in a suitable vessel, a wide-mouth bottle, for example, over night; then, covering the vessel loosely, place in another vessel of water, heat for 2 hours, strain, let stand about 2 hours, pour off clear liquid through muslin strainer, avoiding any of the precipitate, or the liquid may be filtered. Through the filtrate add enough water to make the filtrate measure 32 fluidounces. In the filtrate dissolve the sugar by agitation or percolation, and add the foam.

III.

Mocha coffee.....	av.oz. 4
Glycerin.....	fl.oz. 1
Soda foam,	
Water, boiling.....	of each, sufficient
Sugar.....	av.oz. 52

Mix the glycerin with the ground coffee, allow to stand for 1 or 2 hours, pack in a percolator, and pour on the water until 32 fluidounces of liquid are obtained. In this dissolve the sugar by percolation.

IV.

Coffee, roasted and reduced to fine powder.....	av.oz. 7
Distilled water, hot.....	fl.oz. 8
Brandy.....	fl.oz. 2
Simple syrup, U. S. P., boiling hot.....	fl.oz. 20
Soda foam.....	sufficient

Mix the ingredients, cover well and set aside in moderately warm, not hot, place for about 15 minutes. Then allow to stand for 24 hours at the ordinary temperature, and filter.—D.

Syrup, Cream.

I.

Cream, fresh.....	fl.oz. 16
Sodium carbonate.....	gr. 60
Sugar.....	av.oz. 16

Mix and dissolve by frequent stirring with a glass rod.

II.

Cream, fresh.....	fl.oz. 16
Milk, fresh.....	fl.oz. 16
Sugar.....	av.oz. 32

Dissolve by shaking. Keep in a cool place. The addition of 60 grains of sodium bicarbonate will retard souring.

Syrup, Egg Cream.

Cream.....	fl.oz. 16
Syrup.....	fl.oz. 48
Extract of vanilla.....	fl.dr. 4
Yolks of 16 eggs.	

Rub cream with egg-yolk until perfectly smooth, then add the syrup and flavoring. This is to be served like any other soda syrup, but before handing over, sprinkle a little mixed spice on the foam.

Syrup, Ginger.

I.

Tincture of ginger.....	fl.oz. 2
Syrup.....	fl.oz. 64
Soda foam.....	sufficient

When greater pungency is desired, 1 fluid-dram of tincture of capsicum may be added. For the ordinary tincture of ginger, the soluble essence of ginger may be substituted.

II.

Soluble essence of ginger.....	fl.oz. 1
Tincture of capsicum.....	fl.dr. 2
Syrup.....	fl.oz. 64
Soda foam.....	sufficient

For many people ginger is scarcely warm enough without the addition of capsicum.

Syrup, Kola Coca.

Wine of kola.....	fl.oz. 4
Wine of coca.....	fl.oz. 4
Syrup.....	fl.oz. 48
Soda foam.....	sufficient

Color with caramel and cochineal solution.

Syrup, Lemon.

I.

Solution of citric acid.....	fl.oz. 1
Spirit of lemon.....	fl.dr. 4
Syrup.....	fl.oz. 64
Soda foam.....	sufficient

II.

Citric acid.....	gr. 180
Spirit of lemon.....	fl.dr. 1½
Water.....	fl.oz. 6
Syrup, enough to make.....	fl.oz. 64
Soda foam.....	sufficient

Dissolve the acid in the water and add the spirit, syrup and foam.

III.

Oil of lemon.....	drops 12
Citric acid.....	gr. 300
Syrup.....	fl.oz. 64
Soda foam.....	sufficient

Rub oil with acid and a little syrup, add remainder of syrup, and dissolve, and add the foam.

IV. Grate rind from 3 lemons, rub with 6 av.ounces granulated sugar, add 8 fluidounces of water, macerate a short time, stir fre-

quently, strain, express lemons, mix juice with other liquid, add one-half gallon of simple syrup, U. S. P., and finally sufficient soda foam.

Syrup, Maple.

Maple sugar.....av.lbs. 8
Water.....pints 4
Fruit acid.....fl.oz. 1
Extract of vanilla.....fl.oz. 2
Soda foam.....sufficient

Dissolve the sugar in the water with gentle heat, strain and add the vanilla and foam.

Syrup, Malto.

Extract of malt, thick.....fl.oz. 4
Solution of acid phosphate.....fl.oz. 4
Syrup, enough to make.....fl.oz. 64

Syrup, Mead.

I.

Pineapple syrup.....fl.oz. 2
Soluble essence of ginger.....fl.dr. 4
Sarsaparilla essence.....drops 15
Spirit of nutmeg.....fl.dr. 1
Honey or malt extract.....fl.oz. 2
Syrup, enough to make.....fl.oz. 64
Caramel.....sufficient to color

II.

Sarsaparilla root.....av.oz. 1½
Licorice root.....av.oz. 2
Marshmallow root.....av.oz. 1
Gum arabic.....av.oz. 2

Make a decoction with water, strain to 6 pints, add:

Sugar.....av.lbs. 10
When cold, add:
Oil of lemon.....drops 80
Oil of wintergreen.....drops 80
Oil of cinnamon.....drops 10
Oil of sassafras.....drops 15

III.

Essence of mead.....fl.oz. ½
Honey.....av.oz. 20
Syrup.....fl.oz. 32
Water.....sufficient to make 4 pints

Syrup, Moxie.

I.

Oil of sassafras.....drops 12
Oil of wintergreen.....drops 12
Alcohol.....fl.dr. 6
Fluid extract of gentian.....fl.dr. 6
Compound syrup of sarsaparilla.....fl.oz. 6
Caramel.....fl.oz. 1
Syrup, enough to make.....fl.oz. 64

II.

Compound tincture of gentian.....fl.oz. 1
Sarsaparilla essence.....fl.dr. 4
Syrup.....fl.oz. 32
Syrupy glucose.....fl.oz. 32
Caramel.....sufficient to color

Syrup, Nectar.

I.

Raspberry syrup.....fl.oz. 4
Pineapple syrup.....fl.oz. 2
Vanilla syrup.....fl.oz. 1
Syrup.....fl.oz. 2
Soda foam.....sufficient

II.

Spirit of nutmeg.....fl.dr. 4
Spirit of lemon.....fl.dr. 4
Extract of vanilla.....fl.dr. 4
Water.....fl.oz. 8
Simple syrup, U. S. P.....fl.oz. 56
Soda foam.....sufficient

Add coloring if thought desirable.

III.

Strawberry syrup.....fl.oz. 32
Simple syrup, U. S. P.....fl.oz. 32
Madeira wine.....fl.oz. 4
Spirit of bitter almonds.....fl.dr. 1
Citric acid.....av.oz. ¼
Soda foam.....sufficient

Syrup, Orange.

I.

Oil of orange (fresh).....drops 10
Solution of citric acid.....fl.dr. 4
Syrup.....fl.oz. 64
Soda foam.....sufficient

II.

Oil of orange.....drops 15
Tartaric acid.....gr. 120
Syrup.....fl.oz. 64
Soda foam.....sufficient

Rub oil with acid and small portion of syrup, add remainder of syrup; dissolve, add the foam and strain.

Take 6 good oranges and rub the oil from the rind by means of cut, loaf sugar. Then express the juice of the oranges and add to about 4 or 5 pints of syrup. The sugar used to extract the oil should be added to the syrup and the whole heated gently to dissolve the sugar; then strain. If desired for blood orange, color with raspberry juice or tincture of cudbear. Now add syrup to make 1 gallon. In case the oranges are unusually sweet acidify with citric acid. Finally add sufficient soda foam.

Syrup, Orgeat.

- I.
- | | | |
|--------------------------|--------|----|
| Sweet almonds..... | av.oz. | 8 |
| Bitter almonds..... | av.oz. | 2½ |
| Sugar..... | av.oz. | 48 |
| Water..... | fl.oz. | 26 |
| Orange flower water..... | fl.oz. | 4 |

Blanch the almonds, rub them in a mortar to fine paste with 12 av.ounces of the sugar and 2 fluidounces of the water. Mix the paste with the remainder of the water, strain with strong expression, add the remainder of the sugar, and dissolve it with the aid of a gentle heat. Lastly, add the orange flower water and strain the syrup again.

- II.
- | | | |
|----------------------------|--------|----|
| Cream syrup..... | fl.oz. | 8 |
| Vanilla syrup..... | fl.oz. | 16 |
| Simple syrup..... | fl.oz. | 8 |
| Oil of bitter almonds..... | drops | 5 |

Syrup, Pineapple.

I. Concentrated syrup:

Take 1 pineapple, cut it into thin slices, spread these in layers in a wide shallow vessel and sprinkle sugar over them, a layer of sugar for each layer of fruit; let stand 24 hours, pour off the liquid and set aside. Wash the pieces with 2 pints of water and express. To the expressed liquid add 4 av. pounds of granulated sugar, and apply a gentle heat until dissolved. When nearly dissolved, add the juice first obtained and simmer, strain, and keep in well-corked bottles.

- II.
- | | | |
|-----------------------------------|--------|------------|
| Concentrated pineapple syrup..... | fl.oz. | 4 |
| Syrup..... | fl.oz. | 32 |
| Soda foam..... | | sufficient |

This is the diluted syrup for fountain use.

Syrup, Raspberry.

Make from fresh ripe raspberries as directed for strawberry syrup, or make from concentrated fruit juices of the market.

- | | | |
|----------------------|-------|---|
| Raspberry juice..... | pint | 1 |
| Syrup..... | pints | 7 |
- Mix and add
- | | | |
|-----------------|--------|------------|
| Fruit acid..... | fl.dr. | 4 |
| Soda foam..... | | sufficient |

Syrup, Sarsaparilla.

- I.
- | | | |
|------------------------------|--------|---------------------|
| Essence of sarsaparilla..... | fl.dr. | 4 |
| Syrup..... | fl.oz. | 64 |
| Caramel, | | |
| Soda foam..... | | of each, sufficient |

II.

- | | | |
|------------------------------------|--------|----|
| Fluid extract of sarsaparilla..... | fl.oz. | 1 |
| Fluid extract of licorice..... | fl.dr. | 4 |
| Oil of wintergreen..... | drops | 10 |
| Oil of sassafras..... | drops | 6 |
| Water..... | fl.oz. | 8 |
| Simple syrup, U. S. P., enough | | |
| to make..... | fl.oz. | 64 |

III.

- | | | |
|--------------------------------|--------|---------------------|
| Sarsaparilla essence..... | fl.dr. | 4 |
| Compound fluid extract of sar- | | |
| saparilla (for syrup)..... | fl.dr. | 4 |
| Syrup..... | fl.oz. | 64 |
| - Caramel..... | | sufficient to color |

Syrup, Sherbet.

- I.
- | | | |
|----------------------|--------|------------|
| White wine..... | fl.oz. | 16 |
| Lemon syrup..... | fl.oz. | 16 |
| Pineapple syrup..... | fl.oz. | 32 |
| Soda foam..... | | sufficient |

II.

- | | | |
|----------------------|--------|------------|
| Vanilla syrup..... | fl.oz. | 48 |
| Pineapple syrup..... | fl.oz. | 16 |
| Lemon syrup..... | fl.oz. | 16 |
| Soda foam..... | | sufficient |

Syrup, Strawberry.

- | | | |
|-------------------------------|---------|----|
| Fresh, ripe strawberries..... | quarts | 5 |
| Sugar..... | av.lbs. | 12 |
| Water..... | pints | 1 |

Spread a portion of the sugar over the berries, arranging sugar and berries in layers, let stand for several hours, express the juice, and strain, washing out the mark with water. Add the remainder of the sugar and water, raise to the boiling point and strain; bottle while hot and cork well. When wanted for use, mix with an equal volume of simple syrup. Add fruit acid, and soda foam sufficient.

Syrup, Tea.

- | | | |
|-----------------------|--------|---------------------|
| Orange Pekoe tea..... | av.oz. | 1½ |
| Sugar..... | av.oz. | 26 |
| Water, | | |
| Soda foam..... | | of each, sufficient |

Heat 22 fluidounces of water to boiling, remove vessel from source of heat, add the tea leaves to the water, cover the vessel, and allow leaves to infuse not to exceed one or two minutes; pour the liquid off into a filter, and if the filtrate does not measure 16 fluidounces, pour sufficient cold water on the leaves, stir about for a moment, and decant into filter until filtrate measures 1 pint; in this filtrate dissolve the sugar by agitation

Dissolve the calcium chloride in 8 fluid-ounces of water, and the sodium sulphate and carbonate together in 1 pint of water by aid of heat; filter the latter solution, and while yet hot, add to it the calcium chloride solution. After 10 or 15 minutes, the precipitate will have contracted to a heavy mass at the bottom of the vessel. The supernatant liquid should then be decanted without losing any of the precipitate. To the latter, add the magnesium sulphate, shake thoroughly and rinse into a 10-gallon fountain nearly filled with water. Charge with carbonic acid gas to a pressure of 20 pounds, re-open the fountain, throw in the ferrous sulphate, coarsely powdered, close again, and charge to the usual pressure.

The object of charging lightly first before introducing the iron salt is to prevent oxidation of the latter subsequent to its introduction into the fountain.

Water, Vichy (Grand Grille).

Potassium bicarbonate	gr. 272
Sodium bicarbonate	av.oz. 10
Sodium phosphate, crystal	gr. 220
Magnesium sulphate	gr. 490
Sodium chloride (pure)	gr. 110
Calcium chloride (anhydrous)	gr. 272
Water	sufficient

Triturate sodium phosphate with the potassium bicarbonate, add the sodium chloride, magnesium sulphate, and sodium bicarbonate, stir the mixture with 2 pints of water, pass the magma through a No. 50 hair sieve, rubbing through if necessary with the aid of a little more water.

Dissolve the calcium chloride in 4 fluid-ounces of water, add it to the other solution, and add enough water if necessary, to make the whole measure 4 pints. Shake the whole well together, pour into a 10 gallon fountain, fill the latter with water, and charge with carbonic acid gas in the usual way.

lon fountain, fill the latter with water, and charge the whole in the usual way with carbonic acid gas.

Inasmuch as the mixture of magnesium sulphate and calcium chloride has for its object the formation of some magnesium chloride, the following solution may be substituted instead:

Calcium chloride (anhydrous).....	av.oz. 2
Magnesium chloride (anhydrous).....	av.oz. 1
Water.....	fl.oz. 16

Dissolve and mix the sodium chloride and bicarbonate and potassium bicarbonate as before.

Water, Friedrichshall.

Sodium bicarbonate.....	gr. 884
Sodium sulphate, crystal.....	av.oz. 1 1/4
Potassium sulphate.....	gr. 165
Magnesium sulphate.....	av.oz. 20
Sodium chloride (pure).....	av.oz. 10 1/4
Calcium chloride (anhydrous).....	av.oz. 1
Water.....	sufficient

Triturate the potassium and sodium sulphates in a mortar, add the magnesium sulphate and then 3 pints of water, and stir until dissolved; now add the sodium chloride and bicarbonate, continue the stirring for a few minutes, pour the mixture on a No. 50 hair sieve, add the calcium chloride, previously dissolved in 8 fluidounces of water, and then enough water to make the whole measure 4 pints. Put this into the usual 10-gallon fountain, fill the latter with water, and charge with carbonic acid gas to moderate pressure only.

Water, Hunyadi Janos.

The following makes an excellent imitation:

Potassium sulphate.....	gr. 6
Calcium sulphate.....	gr. 60
Sodium sulphate.....	av.oz. 8 1/2
Magnesium sulphate.....	av.oz. 4 1/2
Water, enough to make.....	gal. 1

Mix, dissolve and filter.

Water, Kissingen (Bakocz).

Potassium bicarbonate.....	gr. 272
Sodium bicarbonate.....	av.oz. 2 3/4
Magnesium sulphate.....	av.oz. 3 3/4
Sodium chloride, pure.....	av.oz. 8 1/2
Calcium chloride (anhydrous).....	av.oz. 2 3/4
Water.....	sufficient

Pulverize the potassium bicarbonate in a

mortar, add the sodium bicarbonate and magnesium sulphate, and triturate the mixture with 1 pint of water, until the potassium and magnesium salts are dissolved. Pass the magma through a No. 50 hair sieve, washing what may remain on the sieve through with another pint of water.

Next rub the sodium chloride with 24 fluidounces of water until nearly dissolved and pass this liquid through the sieve.

Finally dissolve the calcium chloride in a few fluidounces of water, pass it through the sieve, and add a little more water to dissolve all the salt, using enough water to make the combined liquids measure 4 pints. Shake the whole well and place in the usual 10-gallon fountain, fill the latter with water, and charge with carbonic acid in the usual manner.

Water, Selters (Seltzer).

Sodium bicarbonate.....	av.oz. 8 gr. 884
Sodium chloride (pure).....	av.oz. 2 gr. 884
Calcium chloride (anhydrous).....	gr. 490
Magnesium sulphate.....	av.oz. 1 gr. 165
Water.....	sufficient

Dissolve the calcium chloride and magnesium sulphate each in 4 fluidounces of water, mix the solution, let stand for 10 or 15 minutes, and strain through muslin with pressure.

Mix the sodium chloride and bicarbonate with a pint of water, pass the mixture through a No. 50 hair sieve, follow with the preceding liquid and then with enough water to make the liquid measure 4 pints. Shake the whole well, pour into the usual 10-gallon fountain, fill the latter with water, and charge in the usual way with carbonic acid.

The first mixture is for the purpose of forming some magnesium chloride, and hence the following solution may be used instead:

Calcium chloride (anhydrous).....	av.oz. 1/2
Magnesium chloride (anhydrous).....	av.oz. 1/2
Water.....	fl.oz. 8

Add this to the sodium chloride and bicarbonate as before.

Water, Pyrmont.

Calcium chloride (anhydrous).....	av.oz. 2 1/4
Sodium carbonate.....	av.oz. 8 1/2
Sodium sulphate.....	av.oz. 3 gr. 55
Magnesium sulphate.....	av.oz. 1 gr. 884
Ferrous sulphate.....	gr. 82
Water.....	sufficient

Dissolve the calcium chloride in 8 fluid-ounces of water, and the sodium sulphate and carbonate together in 1 pint of water by aid of heat; filter the latter solution, and while yet hot, add to it the calcium chloride solution. After 10 or 15 minutes, the precipitate will have contracted to a heavy mass at the bottom of the vessel. The supernatant liquid should then be decanted without losing any of the precipitate. To the latter, add the magnesium sulphate, shake thoroughly and rinse into a 10-gallon fountain nearly filled with water. Charge with carbonic acid gas to a pressure of 20 pounds, re-open the fountain, throw in the ferrous sulphate, coarsely powdered, close again, and charge to the usual pressure.

The object of charging lightly first before introducing the iron salt is to prevent oxidation of the latter subsequent to its introduction into the fountain.

Water, Vichy (Grand Grille).

Potassium bicarbonate	gr. 272
Sodium bicarbonate	av.oz. 10
Sodium phosphate, crystal	gr. 220
Magnesium sulphate	gr. 490
Sodium chloride (pure)	gr. 110
Calcium chloride (anhydrous)	gr. 272
Water	sufficient

Triturate sodium phosphate with the potassium bicarbonate, add the sodium chloride, magnesium sulphate, and sodium bicarbonate, stir the mixture with 2 pints of water, pass the magma through a No. 50 hair sieve, rubbing through if necessary with the aid of a little more water.

Dissolve the calcium chloride in 4 fluid-ounces of water, add it to the other solution, and add enough water if necessary, to make the whole measure 4 pints. Shake the whole well together, pour into a 10 gallon fountain, fill the latter with water, and charge with carbonic acid gas in the usual way.

PART VII.

MISCELLANEOUS PREPARATIONS.

Alcohol Dilution Table.

To make the below-mentioned strengths of alcohol, ordinary alcohol should be mixed with water, as follows:

85 p.c. alcohol	—17 vol. of alcohol	+2 of water.
80 p.c. alcohol	—16 vol. of alcohol	+3 of water.
75 p.c. alcohol	—15 vol. of alcohol	+4 of water.
70 p.c. alcohol	—14 vol. of alcohol	+5 of water.
65 p.c. alcohol	—13 vol. of alcohol	+6 of water.
60 p.c. alcohol	—12 vol. of alcohol	+7 of water.
55 p.c. alcohol	—11 vol. of alcohol	+8 of water.
50 p.c. alcohol	—10 vol. of alcohol	+9 of water.
45 p.c. alcohol	—9 vol. of alcohol	+10 of water.
40 p.c. alcohol	—8 vol. of alcohol	+11 of water.
35 p.c. alcohol	—7 vol. of alcohol	+12 of water.
30 p.c. alcohol	—6 vol. of alcohol	+13 of water.
25 p.c. alcohol	—5 vol. of alcohol	+14 of water.
20 p.c. alcohol	—4 vol. of alcohol	+15 of water.
15 p.c. alcohol	—3 vol. of alcohol	+16 of water.
10 p.c. alcohol	—2 vol. of alcohol	+17 of water.
5 p.c. alcohol	—1 vol. of alcohol	+18 of water.

Alloys of Low Melting Point.

I. Newton's metal:

Bismuth	.....parts 8
Lead	.....parts 5
Tin	.....parts 3

This mixture melts at 95 degs. C.

II. Rose's metal:

Bismuth	.....parts 2
Lead	.....part 1
Tin	.....part 1

This mixture liquefies at 94 degs. C.

III. Wood's metal:

Bismuth	.....parts 15
Lead	.....parts 8
Tin	.....parts 4
Cadmium	.....parts 3

This mixture melts at 68 degs. C.

Ammonia, Domestic or Household.

I.

Borax	.....gr. 120
Oil of cinnamon	.....drop 1
Oil of cloves	.....drop 1
Oil of citronella	.....drop 1
Alcohol	.....fl.dr. 1
Ammonia water	.....fl.oz. 32

Dissolve the borax in the ammonia and the oils in the alcohol, and mix the two solutions.

II.

Sodium carbonate	.....av.oz. 20
Water of ammonia	.....fl.oz. 48
Water	.....fl.oz. 82

These are mixed and the clear solution is decanted after 2 or 3 days.

Axle Greases.

I.

Plumbago, very fine powder	.....av.oz. 4
Lard	.....av.oz. 12

Mix well.

II.

Plumbago, very fine powder	.....av.oz. 4
Suet	.....av.oz. 12

Mix well.

III.

Plumbago, very fine powder	.....av.oz. 6
Petrolatum	.....av.oz. 10

Mix well.

IV.

Caustic soda	.....av.oz. 4
Water	.....fl.oz. 16
Palm oil	.....av.oz. 8
Tallow	.....av.oz. 8

Dissolve the soda in the water, add the fats, and heat until a homogeneous mixture is produced.

V. An excellent lubricant is produced by filtering crude petroleum through animal charcoal (bone black).

VI. Heat together 10 pounds of rosin oil, and 8 pounds of lime, slaked and afterward sifted fine. Stir the mixture constantly while heating, and continue the heating until the mixture is uniform and of the consistency of syrup. The resulting mixture is called rosin soap. Take 1 pound of this and 1 pound of palm oil, melt together, then stir in 50 pounds of rosin oil, and sufficient rosin soap to make the mixture of the consistency of butter. Lastly, add $\frac{3}{4}$ pound of caustic soda, heat and stir until thoroughly combined.

Axle Grease Stains, Removal of.

See "Stains, Removal of."

Barometer or Hygrometer Paper.

Cobalt chloride.....	av.oz.	4
Sodium chloride.....	av.oz.	2
Acacia.....	av.oz.	1
Calcium chloride.....	gr.	175 to 350
Water.....	fl.oz.	12

Mix, dissolve and filter. In very dry regions, a larger amount of calcium chloride must be employed than in moister regions. Glycerin may be substituted for the calcium chloride, but the latter is to be preferred.

To prepare the paper, soak white blotting paper in this liquid and then dry.

The amount of moisture in the air is indicated by the following colors:

Rose red.....	rain
Pale red.....	very moist
Bluish red ..	moist
Lavender blue.....	nearly dry
Blue	very dry

Batteries, Filling for Dry.

Charcoal.....	av.oz.	8
Mineral carbon or graphite.....	av.oz.	1
Manganese peroxide.....	av.oz.	8
Calcium hydrate.....	av.oz.	1
Arsenic (oxide).....	av.oz.	1
Glucose, mixed with dextrin or starch.....	av.oz.	1

These are intimately mixed dry, and then worked into a paste of proper consistence with a fluid composed of equal parts of a saturated solution of chloride of ammonium and chloride of sodium in water, to which are added one-tenth volume of a solution of bichloride of mercury and an equal volume of hydrochloric acid. The fluid is added gradually and the mass well worked up.

Battery, Fluid.**I. For bichromate batteries:**

Mercury bisulphate.....	gr.	120
Potassium bichromate.....	av.oz.	2½
Sulphuric acid, crude.....	fl.oz.	3
Water.....	fl.oz.	16

In the water dissolve first the mercury salt and then the bichromate; then add the sulphuric acid very carefully, stirring constantly with a glass rod. When cool the solution is ready for use. The mercury keeps the zincs well amalgamated.

Sometimes the mercury salt is omitted, and frequently sodium bichromate is substituted for the potassium bichromate.

II.

Potassium bichromate.....	av.oz.	3
Sulphuric acid.....	fl.oz.	2
Water.....	fl.oz.	16
Mix and dissolve.		

III. For Leclanché batteries.

Ammonium chloride.....	av.oz.	5
Water, enough to make.....	fl.oz.	16
Mix and dissolve.—N. F.		

III. For gravity batteries:

Use a saturated solution of copper sulphate in water.

Battery, Storage.

A very satisfactory storage battery may be constructed in the following manner: After procuring two half-round porous cups and a glass jar sufficiently large to hold them both, get two pieces of sheet lead one-sixteenth of an inch thick, wide enough to fit the half-round side of the porous cups, and deep enough to come an inch above the top edge of the cups and jar. Solder a screw post to each lead plate, nearly fill the cup with a paste consisting of red lead and a solution of sodium sulphate thin enough to run like a cement, and put the lead plates in place, one of them being marked with an +. Fill the outer jar to within half an inch from the top with a 1:8 solution of sulphuric acid, and the battery is ready for charging. This may be done by attaching for 24 hours to a 12-cell copper sulphate battery, or to a dynamo; but always charge in the same direction. If well charged these storage cells will retain a large volume of electricity for a considerable time, and with a battery consisting of two or more cells small motors, lamps and induction coils may be operated. After the first charge a 5-cell battery suffices to recharge.

Baume's Scale.

To convert Baume's degrees to specific gravity, the following may be employed:

I.

For liquids lighter than water, add the degree Baume to 130 and divide the sum into 140, viz.: $45^{\circ} = 140 + (130 + 45) = 140 \div 175 = 0.80$ sp. gr.

II.

For liquids heavier than water, subtract the degree Baume from 145 and divide into 145, viz.: $29^{\circ} B = 145 + (145 - 29) = 145 \div 116 = 1.25$ sp. gr.

Bedbug Exterminators.

The number of "cures" for bedbugs is legion. The following list embraces some of the substances employed for their destruction: Oil of turpentine, kerosene, benzin, mercuric chloride, mercury, paris green, zinc chloride, arsenic, insect powder, Scotch snuff, capsicum, naphthalin, camphor, sulphur fumes, ammonia vapor, soft soap, carbolic acid (both pure and crude), colocynth, wormwood, aloes, pepper, sodium borosalicylate, cimicifuga root; also fresh sprays of strongly-scented plants, such as ledum palustre, pennyroyal, tansy, pine, etc., placed beneath the mattress.

Bedbug exterminators may be in the powder, the liquid or the paste form. The powder may be the well known insect powder, or it may be paris green, or it may be a mixture of different insecticides. Sometimes these powders are made into a paste by moistening and are pressed into cracks containing, or suspected of containing, bedbugs or their eggs.

If the powders are used in the dry form, they may be introduced into the crevices by means of an insect powder blower or "gun."

The liquid exterminators may consist of poisonous solutions like those containing corrosive sublimate or carbolic acid, or they may consist of oil of turpentine, kerosene, benzin, oil of cedar, etc., or they may consist of tinctures of bitter substances like colocynth or quassia, or they may consist of resinous solutions, or they may consist of soapy solutions, or again they may consist of several of these classes of substances in combination.

Substances like kerosene, benzin, volatile oils, etc., act by dissolving the chitinous coating of insects and thus obstructing the breathing pores and cause death. The resinous substances act largely by cementing over the eggs and thus prevent their hatching. The bitter substances mentioned are usually destructive to insect life.

The objections to these different substances or exterminative purposes are that resins, oil of turpentine, etc., leave stains, benzin, kerosene, etc., are inflammable, corrosive sublimate, paris green, etc., are excessively poisonous, carbolic acid has an unpleasant odor, etc. The evils of the different substances are

therefore often mitigated by combining several of them.

Liquid exterminators may be applied by means of a brush or feather, but a better method is to employ a machinist's oil-can or a bottle containing a perforated cork in which is inserted a quill.

I. One of the most commonly-used bedbug exterminators is the following:

Corrosive sublimate.....av.oz. 1
Alcohol.....fl.oz. 32

Or some of the alcohol may be replaced by water. However, inasmuch as it is the alcohol and not its corrosive consort, that is presumed to be the insecticide, this replacement is not to be recommended. Very frequently a portion of the alcohol, from about 20 to 80 per cent, is replaced by oil of turpentine; this reacts with the corrosive sublimate, precipitating the latter and being itself partially precipitated. Oil of turpentine alone is an excellent bedbug destroyer.

II.

Corrosive sublimate.....gr. 150
Ammonium chloride.....gr. 300
Decoction of quassia (about 1
in 20).....fl.oz. 32

Mix and dissolve.—H.

III.

Sodium chloride.....av.oz. 2
Zinc sulphate.....av.oz. 4
Water.....fl.oz. 32

Mix and dissolve.—H.

IV. A safe and satisfactory method of exterminating bugs in mattresses, upholstered furniture, etc., is by fumigation with sulphurous acid gas, that is, by burning sulphur in a closed room where these articles are located. The bleaching effect of the gas may be a disadvantage.

V.

Soft or green soap.....av.oz. 1
Caustic soda.....gr. 60
Water.....fl.oz. 14

VI.

Soft or green soap.....av.oz. 6
Turpentine (thick).....av.oz. 1½
Kerosene.....fl.oz. 8
Water, hot.....fl.oz. 20

Dissolve the soap in the hot water, incorporate the turpentine, then the kerosene and stir until cold.—D.

VII.

Naphthalin.....	av.oz. 3
Benzin.....	fl.oz. 30

This mixture may be used indiscriminately on bedding, furniture, textiles of all descriptions, wall-paper, etc.

VIII. There are a number of preparations on the market which are put up in flattened bottles, provided with a perforated metallic top and which consist mainly or entirely of benzin or gasoline, flavored with some volatile oil, and colored with alkanet. These preparations are known by such titles as "Bug Dynamite," "Bugine," etc. Like all benzin or gasoline preparations, they must be used with great caution to avoid explosion or ignition from contact with light or fire.

IX.

Resin.....	av.oz. 1
Benzin.....	fl.oz. 32
Oil of amber, crude.....	fl.dr. 2

Dissolve the resin in the benzin and add the oil.

X.

Oil of amber.....	fl.dr. 1
Oil of cedar.....	fl.dr. 1
Oil of eucalyptus.....	fl.dr. 1
Resin.....	av.oz. 1
Benzin.....	fl.oz. 64

Mix and dissolve.

XI.

Camphor.....	av.oz. 2½
Paraffin wax.....	av.oz. 2½
Oil of poppy.....	fl.oz. 5
Benzin.....	fl.oz. 25

Mix and dissolve.—H.

The oil of poppy may be replaced by the cheaper cotton seed oil.

The paraffin acts like resin in gluing over the eggs of the insect.

XII.

Picric acid.....	gr. 270
Stearic acid.....	av.oz. 1¼
Paraffin wax.....	av.oz. 1¼
Oil of cloves.....	fl.dr. 4
Kerosene.....	fl.oz. 32

Mix and dissolve.

XIII.

Acetic acid.....	fl.dr. 10
Oil of cloves.....	fl.dr. 3
Oleobalsamic mixture.....	fl.oz. 5
Alcohol.....	fl.oz. 24

—H.

XIV.

Naphthalin, crude.....	av.oz.
Tobacco, cut (or Scotch snuff).....	av.oz. 3
Benzin.....	fl.oz. 32
Oil of melissa.....	enough to flavor

Mix the naphthalin, tobacco and benzin, macerate for 5 days, agitating occasionally, decant the clear liquid, and flavor with the oil.

XV.

Colocynth, broken into small pieces.....	av.oz. 1½
Insect powder.....	av.oz. 1½
Benzin.....	fl.oz. 32

Mix, macerate for several days, agitating occasionally, and decant the clear liquid.

XVI.

Sodium borosalicylate.....	av.oz. 4
Water or decoction of quassia (1 in 20).....	fl.oz. 20
Spirit of lavender.....	fl.oz. 10

Mix and dissolve.

XVII.

Savin.....	av.oz. 1
Colocynth.....	av.oz. 1
Capsicum.....	av.oz. 1
Aloes.....	av.oz. 1
Water, hot.....	fl.oz. 40 to 50

Mix the drugs, previously reduced to coarse powder, with the water, and keep in a warm place for several hours, stirring occasionally, then allow to cool and decant the clear liquid.

—H.

XVIII.

Oil of sage (volatile).....	fl.dr. 8
Lampblack.....	av.oz. ¾
Alum, powder.....	av.oz. 81

This may be made into a paste with water and smeared into the crevices of the wood work.

XIX.

Tobacco, powder (snuff).....	av.oz. 10
Insect powder.....	av.oz. 10
Carbolic acid.....	fl.oz. 8
Boric acid, powder.....	av.oz. 2½
Oil of citronella.....	fl.dr. 4

XX.

Insect powder.....	av.oz. 15
Pellitory, powder.....	av.oz. 15
Carbolic acid.....	fl.dr. 6
Oil of citronella.....	fl.dr. 6
Diluted alcohol.....	sufficient

Make a thin paste, which is to be brushed into the cracks.—H.

Benzin Jelly. (Gelatinized Benzin.)**I.**

Cocconut oil soap.....	av.oz. 2
Ammonia water.....	fl.oz. 3
Solution of potassa.....	fl.oz. 1½
Water, enough to make.....	fl.oz. 12

Dissolve the soap with the aid of heat in 4 fluidounces of water, add the ammonia and potassa and the remainder of the water.

If the benzin is added in small portions, and thoroughly agitated, 2½ fluidounces of the above will be found sufficient to solidify 32 fluidounces of benzin.

II.

Cocconut oil soap.....	av.oz. 1½
Ammonia water.....	fl.oz. 3
Glycerin.....	fl.oz. 1
Ether.....	fl.oz. 8
Water, distilled.....	fl.oz. 32

Prepare in a similar manner as the preceding, the finished solution containing only 17 grains of soap to the fluidounce.

III.

Tincture of quillaja.....	fl.oz. 3
Benzin, enough to make.....	fl.oz. 16

Mix and shake for half an hour, then allow to stand 12 hours to solidify.

Sixteen fluidounces of benzin may also be jellified with 4 fluidounces of a 20-per cent infusion of quillaja.

IV.

Castile soap, white.....	av.oz. 2½
Water, boiling.....	fl.oz. 3½
Water of ammonia.....	fl.dr. 5
Benzin, enough to make.....	fl.oz. 16

Dissolve the soap in the water, and when cold, add the other ingredients.

V.

Hard soap, white.....	av.oz. 8
Water, boiling.....	fl.oz. 5
Stronger water of ammonia.....	fl.oz. 8
Benzin.....	fl.oz. 26

Dissolve the soap in the water, and when nearly cold add the ammonia and the benzin, and then perfume to suit.

Soaps with an excess of alkali give the best results.

Bicycle Oil, Illuminating.

Equal parts of kerosene and lard oil.

Bicycle Oil, Lubricating.

Equal parts kerosene and castor oil.

Bicycle Paint (Glossy Black).

Amber.....	av.oz. 16
Linseed oil, boiling.....	fl.oz. 8
Asphaltum, Trinidad.....	av.oz. 3
Resin.....	av.oz. 3
Oil of turpentine.....	fl.oz. 16

Melt the amber in the boiling oil and add the asphaltum and resin. Mix thoroughly, remove to the open air, and gradually add the turpentine oil.

Useful for metallic surfaces, such as on bicycles.

Blackboard Slating or Paint.

In preparing these paints it is essential that the insoluble substances be reduced to very fine powder and that they be thoroughly incorporated in the mixture, and also that they be kept in a state of suspension, during the process of application, by constant agitation.

Of course, much depends upon the skill of the painter, for unless he prepares the surface of the board or wall well before putting on the paint, the latter cannot be expected to appear to the best advantage. Two coats are usually to be preferred to one, and uneven surfaces, after either coat has been applied should be rendered smooth by rubbing with sandpaper or emery cloth.

I.

Lampblack.....	av.oz. 1
Pumice stone.....	av.oz. 4
Boiled linseed oil.....	fl.oz. 8
Oil of turpentine, enough to make.....	fl.oz. 32

II.

Shellac.....	av.oz. 4
Lampblack (fine quality).....	av.oz. 1
Emery flour.....	av.oz. 1
Ultramarine blue.....	av.oz. 1
Alcohol.....	fl.oz. 32

Dissolve the shellac in the alcohol. Place the lampblack, emery and ultramarine blue on a cheese-cloth strainer, pour on part of the shellac solution, stirring constantly, and gradually adding the solution until all of the powders have passed through the strainer.

III.

Shellac.....	av.oz. 4
Lampblack.....	av.oz. ¾
Ultramarine blue.....	av.oz. 1¼
Rottenstone, powder.....	av.oz. 2
Pumice powder.....	av.oz. 8
Alcohol.....	fl.oz. 32

Dissolve the shellac in the alcohol, add the other ingredients, and shake well.

IV.

Ivory black	av.oz.	2
Emery flour	av.oz.	1
Ultramarine blue	av.oz.	1
Shellac	av.oz.	4
Alcohol	fl.oz.	32

Mix well and agitate until the shellac is dissolved.

Wood alcohol may be substituted for the alcohol.

Blacking for Shoes.

I.

Bone black	av.oz.	6
Molasses	av.oz.	24
Sugar	av.oz.	4
Train or fish oil	fl.oz.	3
Sulphuric acid, commercial	fl.dr.	5

Mix together and set aside for 10 or 12 hours, giving an occasional shake. Then add, under constant stirring, the following:

Decoction of tan bark	fl.oz.	4
Bone black	av.oz.	18
Sulphuric acid, commercial	fl.dr.	13

Which have previously been mixed and allowed to stand a few hours.

II.

Rape seed oil	fl.oz.	5
Simple syrup	fl.oz.	10
Water	fl.oz.	38
Ivory black	av.oz.	25
Sulphuric acid, commercial	fl.oz.	7

Mix the oil, syrup, and 25 fluidounces of water, then add slowly, with constant stirring, the acid, and finally the remainder of the water.

III.

Bone black	av.oz.	10
Fish oil	fl.oz.	1
Simple syrup	fl.oz.	4
Water	fl.oz.	25
Sulphuric acid, commercial	fl.oz.	1
Muriatic acid, commercial	fl.dr.	7
Ferrous sulphate	gr.	150

Mix the bone black, oil, syrup, and 20 fluidounces of water, gradually, and with constant stirring, add the sulphuric acid and then add the muriatic acid and the ferrous sulphate, previously dissolved, in the remainder of the water.—H.

IV.

Bone black	av.oz.	10
Molasses	av.oz.	6
Water	fl.oz.	5
Muriatic acid, commercial	fl.dr.	7
Sulphuric acid, commercial	fl.dr.	7
Oleic acid	fl.oz.	1

—H.

V.

Bone black	av.oz.	10
Rape oil	fl.oz.	1
Simple syrup	fl.oz.	2½
Mucilage of gum arabic	fl.oz.	1½
Diluted acetic acid	fl.oz.	2
Water	fl.oz.	2
Alizarin	av.oz.	4

—H.

VI.

Bone black	av.oz.	15
Simple syrup	av.oz.	9
Strong cider vinegar	av.oz.	3
Sulphuric acid, commercial	fl.oz.	1½
Caoutchouc	av.oz.	¼
Rape oil	fl.oz.	2

Mix the bone black, syrup and vinegar, stir well and add gradually, with constant agitation, the acid, set aside for 8 days, giving the mixture an occasional stir, and then add the caoutchouc previously dissolved in the oil by the aid of heat.

Blacking, Day & Martin's.

Ivory black	av.oz.	16
Sulphuric acid, commercial	fl.dr.	4
Olive oil	fl.oz.	1
Sugar	av.oz.	16
Diluted acetic acid, enough to make	gal.	1

Bleaching of Linseed and Poppy Seed Oil.

Mix 1 pint of the oil in a bottle with a solution of 150 grains of potassium permanganate in 8 fluidounces of water, shake thoroughly, set aside for 24 hours in a warm place, and then add 225 grains of sodium sulphite in coarse powder. Agitate the whole thoroughly until the latter is dissolved, and incorporate 5 fluidrams of crude hydrochloric acid. Shake frequently until the brown liquid has become quite light in color, and wash the oil with water containing a small amount of chalk until the washings are no longer acid. After separating all the water, the oil may be filtered through exsiccated sodium sulphate.

—D.

Bleaching Sponges.

Soak the sponges in dilute muriatic acid over night; wash well to remove lime; dissolve 1 pound of hyposulphite of soda in a gallon of water, and immerse in this solution the moist sponges for several hours; then pass the sponges through a bath of dilute muriatic acid; wash in water and dry.

Bleaching of Sponges.

See "Sponges, Bleaching of." :

Blue Prints.

See "Paper, Blue Print."

Bluing, Liquid.

Prussian blue.....	av.oz.	5
Oxalic acid.....	av.oz.	1 1/4
Water.....	fl.oz.	10

After solution is effected, dilute as much as desired.

Soluble blue or blue aniline may also be employed for making this preparation.

Copper, Bluing of.

Dissolve 1 part of Schlippe's salt in 15 of water, heat to boiling in a porcelain or porcelain-lined vessel, then introduce the copper, suspending the latter so it does not touch the sides of the vessel, allow it to remain until sufficiently affected, then remove, wash and dry.—H.

Boiler Compounds for Preventing Incrustation.

A great many substances are recommended as useful in preventing the lime of the water forming hard scales on the interior of steam boilers, and all act by preventing the agglutination of the particles. Among the best of these may be mentioned potatoes, one-fiftieth of the weight of the water being introduced glycerin, 3 pounds to every ton of coal consumed, is another useful addition. Sodium carbonate, ammonium chloride, molasses, spent tanner's bark, slippery elm bark, glucose, etc., are similarly employed. The following formulas for "boiler compounds" may also be employed:

I.

Catechu.....	av.lb.	2
Sal soda, crystal.....	av.lb.	2
Dextrin.....	av.lb.	1
Potash, crude.....	av.oz.	8
Alum.....	av.oz.	8
Sugar.....	av.oz.	8
Gum arabic.....	av.oz.	8

II.

Turmeric.....	av.lb.	2
Sodium bicarbonate.....	av.lb.	2
Dextrin.....	av.lb.	1
Potash, crude.....	av.oz.	8
Alum.....	av.oz.	8
Molasses.....	av.oz.	8

The foregoing amounts are for a 5-horse power boiler, and for water rich in lime. The next is for river water, 100-horse power boiler, and must be renewed whenever the boiler is emptied:

III.

Sal soda, crystal.....	av.lb.	18
Dextrin.....	av.lb.	18
Alum.....	av.lb.	6
Sugar.....	av.lb.	6
Potash, crude.....	av.lb.	8

Boiling Points of Saturated Aqueous Solutions.

Sodium acetate.....	256 degs. F.	125 degs. C
Sodium nitrate.....	246 degs. F.	119 degs. C
Potassium nitrate.....	238 degs. F.	115 degs. C
Ammonium chloride.....	236 degs. F.	114 degs. C
Sodium chloride.....	224 degs. F.	107 degs. C
Magnesium sulphate.....	223 degs. F.	106 degs. C
Alum.....	220 degs. F.	105 degs. C
Potassium chlorate.....	218 degs. F.	103 degs. C
Copper sulphate.....	216 degs. F.	102 degs. C
Iron sulphate.....	216 degs. F.	102 degs. C
Lead acetate.....	215 degs. F.	101 degs. C
Sodium sulphate.....	213 degs. F.	100 degs. C

Boric Acid to Powder.

This acid is found very difficult to reduce to a fine powder by ordinary manipulations, but a satisfactory and elegant powder may be made by the following process: First warm a wedgewood mortar by pouring into it a little alcohol and setting fire to it. Then put into the warm mortar the boric acid with a few drops of glycerin, when it will be found to be easily reduced to a fine powder.

Bottle Capping Mixture.**I.**

Gelatin.....	av.oz.	1
Gum arabic.....	av.oz.	1
Boric acid.....	gr.	20
Starch.....	av.oz.	1
Water.....	fl.oz.	16

Mix the gelatin, gum and acid with 14 fluidounces of cold water, stir occasionally until the gum is dissolved, heat the mixture to boiling, remove the scum and strain. Also mix the starch intimately with the remainder of the water, and stir this mixture into the hot gelatin mixture until a uniform product results. The latter may be tinted with any suitable aniline dye.

I.

Borax, powder.....	gr. 110
Soap, white castile, powder..	av. oz. $\frac{1}{2}$
Cocoonut oil.....	av. oz. $\frac{3}{4}$
Lanolin.....	av. oz. $1\frac{1}{4}$
Rose water.....	fl. oz. 20
Oil of bergamot.....	drops 8
Oil of neroli.....	drops 8
Oil of rose.....	drops 4
Oil of wintergreen.....	drop 1
Oil of orris, liquid.....	drop 1

Triturate the first four ingredients together until well mixed, then gradually add the rose water previously warmed to 40 degs. C., triturating constantly during this addition, and add the oils.—D.

II.

White castile soap, powder.....	gr. 22
Lanolin.....	av. oz. 1
Tincture of benzoin.....	fl. dr. $1\frac{1}{2}$
Distilled water.....	sufficient

Dissolve the soap in 2 fluidounces of warm water, also mix the lanolin with 2 fluidounces of water, then incorporate the two with each other, finally adding the tincture. The latter may be replaced by 90 gr. of powdered borax.

III.

Borax, powder.....	gr. 140
White castile soap, powder..	av. oz. $\frac{1}{2}$
Cacao butter, grated.....	av. oz. $1\frac{1}{2}$
Cocoonut oil.....	av. oz. 2
Water.....	fl. oz. 2
Rose water.....	fl. oz. 28
Oil of bergamot.....	drops 20
Oil of neroli.....	drops 5
Oil of orris.....	drop 1
Vanilla sugar.....	gr. 150

Triturate the first five ingredients together in a warm mortar until well mixed, then gradually incorporate the rose water previously warmed to 40 degs. C., and add the remaining ingredients previously triturated together.—D.

IV.

Borax, powder.....	gr. 90
White castile soap, powder....	gr. 180
Cocoonut oil.....	av. oz. $1\frac{1}{2}$
Water.....	fl. oz. 1
Rose water.....	fl. oz. 17
Oil of bergamot.....	drops 8
Oil of neroli.....	drops 4
Oil of wintergreen.....	drops 2
Oil of ylang ylang.....	drop 1
Oil of bitter almond.....	drop 1

Triturate the first four ingredients together until well mixed, gradually add the rose water, previously heated to 40 degs. C., until

thoroughly incorporated and finally add the oils.—D.

V. Take fresh strained cucumber juice, bring to a boil as quickly as possible, cool down rapidly, and to every 5 fluidounces of this juice, add:

Borax, powder.....	gr. 175
Sodium acetate.....	gr. 90
Tincture of quillaja.....	fl. oz. $2\frac{1}{2}$
Tincture of benzoin.....	fl. dr. 4
Rose or orange flower water....	fl. oz. 16

Mix the whole thoroughly. It may be tinted a pale green with chlorophyll and perfumed with essence of cassie.

VI.

Cucumber juice, boiled and cooled.....	fl. oz. 4
Spirit of soap.....	fl. oz. 4
Rose or orange flower water....	fl. oz. 8

This may be colored and perfumed like the preceding.

VII. The last two are known as "cucumber milk" or "milk of cucumbers"; this preparation has received the same title, but is devoid of cucumber in any form:

Borax, powder.....	gr. 225
Sodium acetate.....	gr. 225
Spirit of soap.....	fl. dr. 5
Tincture of benzoin.....	fl. dr. 5
Glycerin.....	fl. dr. 10
Rose water.....	fl. oz. 21
Oil of bergamot.....	drops 4
Oil of rose.....	drops 2
Spirit of orris.....	fl. dr. $1\frac{1}{2}$
Tincture of musk.....	drops 3
Coumarin sugar.....	gr. 12

Dissolve the borax and sodium acetate in the rose water, add the remaining ingredients, and mix well.—D.

Toilet Lotions.

Under this title are included transparent preparations, which are employed instead of some of the preceding "creams" and "milks," for roughnesses of the skin, cracked hands, etc. These may be denominated "face lotion," "glycerin lotion," "cosmetic lotion."

I.

Glycerin.....	fl. oz. 3
Rose or orange flower water....	fl. oz. 13

This may be tinted with solution of carmine or cochineal if desired.

II.

Castile soap, white.....av.oz.	½
Honey.....gr.	120
Borax.....gr.	120
Distilled extract of witch hazel.fl.oz.	2
Glycerin.....fl.oz.	2
Alcohol.....fl.oz.	2
Solution of cochineal, or carmine.....sufficient to color	
Water, enough to make.....fl.oz.	16

Dissolve the soap and borax in boiling water, allow to cool, add the other ingredients, macerate for 24 hours, and filter.

III.

Tincture of arnica.....fl.oz.	4
Glycerin.....fl.oz.	8
Rose water.....fl.oz.	4

Mix and filter.

IV.

Borax.....gr.	800
Glycerin.....fl.dr.	10
Rose water.....fl.oz.	31
Coumarin sugar.....gr.	15
Tincture of ambergris.....drops	8

Oil of rose.....drops	6
Oil of neroli.....drop	1
Solution of carmine.....sufficient	

Dissolve the borax and sugar in the water, add the glycerin and other ingredients, shake well, and filter. Sufficient of the carmine solution is to be used to impart a pale rose tint.—D.

Toilet or Cosmetic Jellies.

These are preparations of stiff or thick consistence intended as emollient toilet applications for the skin. The body consists either of gelatin, starch, tragacanth, or similar substance. Other common ingredients are glycerin, water, and perfumed ("extract," essence, or volatile oil). Other additions are boric acid, salicylic acid, fluid extract or tincture of arnica, fluid extract of calendula and distilled extract of witch hazel. Sometimes they are tinted a pale rose color with cochineal or carmine.

The common appellation for these jellies is "glycerin jelly." If containing arnica, they may be known as "arnica jelly"; if containing calendula, "calendula jelly"; witch hazel, "witch hazel jelly"; if tinted a rose color and flavored with oil of rose, "rose jelly" or "jelly of roses," etc.

Owing to their thickness, these prepara-

tions must be dispensed in wide-mouthed bottles, or jars, or in collapsible tubes.

I.

Gelatin.....gr.	160 to 240
Boric acid.....gr.	240
Glycerin.....fl.oz.	6
Water.....fl.oz.	10

Perfume to suit.

Dissolve the gelatin in the water by the aid of heat, also the acid in the glycerin, mix, allow to cool somewhat and incorporate the perfume.

The amount of gelatin may be varied to suit the thickness desired.

The perfume must be one which mixes without opalescence, or otherwise it mars the beauty of the preparation. Orange flower water or rose water may be substituted for the water if desired, or another perfume consisting of:

Vanillin.....gr.	4
Coumarin.....gr.	4
Spirit of bitter almond.....fl.dr.	1½
Alcohol.....fl.dr.	8

added to the quantities given above would prove agreeable.

II.

Gelatin.....gr.	240
White of egg.....av.oz.	1
Salicylic acid.....gr.	25
Rose water.....fl.oz.	12
Glycerin, enough to make.....fl.oz.	25

Dissolve the gelatin in the rose water by the aid of the water bath, using a gentle heat. Allow to cool, and before it jellifies, add the albumen and stir together. Mix the salicylic acid with the glycerin, and after again applying heat to the gelatin solution, add it to the latter, stirring constantly. When the mixture is quite homogeneous, remove from the fire and filter, by means of a hot filtration apparatus, directly into receptacles in which it solidifies. Instead of rose water, any other distilled perfumed water, such as orange flower water, may be used.

III.

Gelatin.....av.oz.	1
Glycerin.....fl.oz.	16
Water.....fl.oz.	8
Oil of rose.....drops	2
Oil of lavender flowers.....drops	10

Soak the gelatin in the mixed glycerin and water for 12 hours, then heat on a water bath

until dissolved, and finally add the oils. Other flavors may be used. Also other additions may be made; carbolic acid, for example, would make it a carbolated glycerin jelly.

IV.

Fluid extract of arnica.....	f.oz. 1
Glycerin.....	f.oz. 6 to 8
Gelatin.....	av.oz. 1
Water.....	sufficient

Cover the gelatin, contained in a suitable vessel, with cold water; allow it to macerate several hours or until soft and pliable; drain off the excess of water, dissolve by heat in the residual water and the glycerin, the quantity of the latter varying with the season, using more in the winter than in hot weather. When dissolved, add the arnica, perfume to suit and color with solution of carmine.

V.

Suitably perfume glycerite of starch and color it with solution of cochineal, and add extract of arnica. This and the preceding are known as "Arnica Jelly."

VI.

Glycerin.....	f.oz. 6¼
Water.....	f.oz. 6¼
Starch.....	av.oz. 1¼
Fluid extract of arnica.....	f.oz. 1½
Spirit of bitter almond.....	f.dr. 2½
Carbolic acid.....	f.dr. 1

Mix the glycerin and water, add the starch, rub to a smooth mixture, and heat over a direct flame with constant stirring until a perfectly smooth jelly is formed; allow to cool, and when nearly cold, add the fluid extract, spirit and acid.

VII.

Glycerite of starch.....	av.oz. 14
Fluid extract of calendula.....	f.oz. 1¼
Solution of cochineal or carmine.....	sufficient to color a rose tint
Oil of rose.....	sufficient to perfume

VIII.

Glycerin.....	f.oz. 32
Tragacanth, powdered, enough to thicken, or about.....	av.oz. 1
Borax.....	av.oz. 1
Orris root, powder.....	av.oz. 2
Essence of cassia.....	f.oz. 1
Essence of jasmine.....	f.dr. 4

Mix the essences with the powdered orris root; dissolve the borax in the glycerin and

mix intimately with the tragacanth, adding the essences and orris root with trituration.

Owing to the odor, this should be denominated "violet jelly" or "jelly of white violets."

IX.

Tragacanth, powder.....	gr. 160
Glycerin.....	f.oz. 5½
Water.....	f.oz. 10½

Triturate the gum with the glycerin and water to a smooth paste, and then perfume as desired.

X.

Mucilage of Irish moss.....	av.oz. 4
Glycerin.....	f.oz. 6
Distilled extract of witch hazel.....	f.oz. 4
Cologne water.....	f.oz. 2
Borax.....	gr. 30

Dissolve the borax in the witch hazel extract, mix with 3 fluidounces of glycerin and with the cologne, add slowly to the mucilage previously mixed with the remainder of the glycerin. After standing a few hours strain the mixture.

XI.

Russian isinglass.....	gr. 108
Clarified honey.....	av.oz. 1
Glycerin.....	f.oz. 5½
Distilled extract of witch hazel.....	f.oz. 4
Distilled water.....	f.oz. 6
Oil of neroli.....	drops 30

Dissolve the isinglass in the water by aid of a gentle heat, add the witch hazel extract, strain and finally add the oil.

XII.

Spermaceti.....	av.oz. 3
White wax.....	av.oz. 1½
Sweet almond oil.....	f.oz. 6
Glycerin.....	f.oz. 8
Tragacanth, powder.....	gr. 45
Rose water.....	f.oz. 9

Dissolve the tragacanth in the glycerin, with gentle heat, and add the rose water; melt the other ingredients by heat, add to the glycerin mixture, and beat with an egg-beater until nearly cold, or triturate vigorously in a wide and capacious mortar.

XIII.

Glycerite of starch.....	av.oz. 12
Lanolin.....	av.oz. 4

Triturate the lanolin with a small portion of glycerite until thoroughly mixed, then add the remainder of the glycerite gradually.

rubbing thoroughly after each addition. Any suitable perfume may be added.

This preparation may be known as lanolin jelly or lanolin glycerite.

Lime Juice and Glycerin.

This is a cosmetic lotion of indefinite character, usually containing no lime juice and frequently even no glycerin.

This preparation is not to be confounded with the preparation of the same title intended for internal use.

The following formulas may be employed:

- I.
- | | | |
|--------------------------|---------|----|
| Borax..... | dr. | 2 |
| Sweet almond oil..... | fl.oz. | 26 |
| Castile soap, white..... | dr. | 2 |
| Water..... | fl.oz. | 8 |
| Liquor potassa..... | fl.dr. | 8 |
| Perfume..... | to suit | |

Dissolve the soap, finely shredded, and the borax in the water over a water bath, place in a large bottle, and gradually add the oil, shaking well after every addition; then add the liquor potassa, and shake well till cold; lastly add the perfume and give an occasional shake for 12 hours.

- II.
- | | | |
|-----------------------|--------|---|
| Sweet almond oil..... | fl.oz. | 6 |
| Castor oil..... | fl.oz. | 2 |
| Lime water..... | fl.oz. | 4 |
| Glycerin..... | fl.oz. | 2 |

Mix well by agitation.

- III.
- | | | |
|----------------------|--------|---|
| Olive oil, best..... | fl.oz. | 8 |
| Lime water..... | fl.oz. | 8 |
| Oil of lemon..... | fl.dr. | 2 |

- IV.
- | | | |
|------------------------------|--------|----|
| Lime juice..... | fl.oz. | 8 |
| Rose water..... | fl.oz. | 4 |
| Alcohol..... | fl.oz. | 2 |
| Oil of lemon..... | drops | 24 |
| Oil of lavender flowers..... | drops | 24 |
| Glycerin..... | fl.oz. | 2 |

Mix the lime juice and rose water and add about two-thirds of the alcohol; shake well together, let stand about 24 hours, strain, add the other ingredients, first dissolving the oils in the alcohol.

Camphor Ice.

These are solid preparations containing fatty bodies like wax and spermaceti in combination with camphor, and are intended for inunction of the hands and face where there

is roughness or cracking of the skin. They are prepared by melting the fatty substances, allowing to cool somewhat, stirring in the camphor, allowing to cool, adding flavoring oil, if the latter be used, and pouring into molds. The best material for the latter is block tin. It may be chilled before casting the mixture as this renders adhesion less likely.

Much cheaper, though less elegant, molds may be made of tinned iron.

The usual way of putting up camphor ice for sale is to wrap it first in thin smooth paper, then in an outer covering of tin foil, and lastly to inclose it in a paper box.

Camphor ice may be known by this title; if it contain glycerin, it should be known as glycerin camphor ice (sometimes also known as "compound glycerin cream"), and if containing petrolatum as petrolatum camphor ice.

- I.
- | | | |
|----------------------------|--------|----|
| Spermaceti..... | av.oz. | 2 |
| White wax..... | av.oz. | 4 |
| Sweet almond oil..... | fl.oz. | 8 |
| Camphor..... | av.oz. | 2 |
| Oil of bitter almond..... | fl.dr. | 1 |
| Expressed oil of mace..... | gr. | 60 |

Melt the wax and spermaceti, add the sweet almond oil, then the camphor in small pieces, stir constantly until dissolved, allow to cool, stirring frequently; when quite cool, add the remaining oils, and finally pour the mixture into molds.

- II.
- | | | |
|------------------|--------|----|
| Mutton suet..... | av.oz. | 6 |
| Spermaceti..... | av.oz. | 4 |
| White wax..... | av.oz. | 4 |
| Camphor..... | av.oz. | 1½ |

Melt together by a gentle heat, reserving the addition of the camphor until the other ingredients are liquefied, on account of its volatility. Stir well as the mixture begins to cool, continuing until ready to set, then pour into molds.

- III.
- | | | |
|--|--------|-----|
| Mutton suet, strained or filtered clear..... | av.oz. | 12 |
| Spermaceti..... | gr. | 320 |
| White wax..... | gr. | 320 |
| Camphor..... | av.oz. | 1½ |

Melt the suet, spermaceti, and wax, add the camphor in small pieces, stir until dis-

solved, stir occasionally until quite cool, and pour into molds.

Glycerin Camphor Ice. (Compound Glycerin Cream.)

- I.
- | | |
|------------------------------|-----------|
| Stearin (stearic acid) | av.oz. 4 |
| Lard | av.oz. 5 |
| White wax | av.oz. 2½ |
| Spermaceti | av.oz. 2½ |
| Borax, powder | gr. 80 |
| Glycerin | fl.dr. 4 |
| Camphor | av.oz. 1 |

Melt the first four ingredients on a water bath. Dissolve the borax in the glycerin. Add the latter gradually to the former; when at the point of cooling, stir well, add the camphor in pieces, stir again until dissolved and pour into molds.

- II.
- | | |
|---|-----------|
| Spermaceti | av.oz. 2 |
| White wax | av.oz. 1½ |
| Olive, castor or cottonseed or
other pure bland, fixed oil. | fl.oz. 10 |
| Camphor | av.oz. 1½ |
| Glycerin | fl.dr. 5 |
| Rose water | fl.oz. 1½ |
| Borax | gr. 40 |

Melt together the two fats, add the oil, then the camphor and stir constantly until dissolved. Now, add the glycerin mixed with the rose water in which the borax has previously been dissolved, stir the whole until nearly cold, and pour into molds.

Petrolatum Camphor Ice

- | | |
|------------------------|-----------|
| Paraffin wax | av.oz. 5½ |
| White petrolatum | av.oz. 8 |
| White wax | av.oz. 3¼ |
| Camphor | av.oz. 1 |

Melt the two waxes together, add the petrolatum, and then the camphor in pieces, stir until the latter is dissolved, allow to cool, and pour into molds.

Toilet Lanolin.

Under this heading are included fatty combinations consisting mainly of lanolin, which may be put up in stick form by the usual method of casting in molds. (See "Camphor Ice.")

- I.
- | | |
|--------------------------|----------|
| Benzoinated suet | av.oz. 3 |
| Lanolin | av.oz. 6 |
| Boric acid, powder | av.oz. 1 |

Melt the suet, add the lanolin, stir in the acid, and form into sticks.—D.

- II.
- | | |
|------------------------------|-----------|
| Benzoinated suet | av.oz. 2 |
| Yellow wax | av.oz. 2 |
| Lanolin | av.oz. 5½ |
| Carbolic acid, crystal | av.oz. ½ |

Melt the wax and suet, add the lanolin and acid, and form into sticks.—D.

- III.
- | | |
|------------------------|-----------|
| Benzoinated suet | av.oz. 2½ |
| Yellow wax | av.oz. ¾ |
| Lanolin | av.oz. 6½ |
| Salicylic acid | gr. 90 |

Melt the suet and wax, stir in the acid, add the lanolin, and form into sticks.—D.

Almond Paste. (Amandine.)

- I.
- | | |
|---------------------------------------|------------|
| Bitter almonds | av.oz. 7 |
| Orris root, powder | av.oz. 1¼ |
| White castile soap, powder | av.oz. 1¼ |
| Glycerite of starch | av.oz. 8½ |
| Clarified honey | av.oz. 2 |
| Oil of lavender flowers | fl.dr. 1 |
| Oil of bergamot | fl.dr. 2 |
| Oil of bitter almonds | drops 8 |
| Solution of cochineal, to color | sufficient |

Blanch the almonds, heat them with a small quantity of water to a smooth paste, add the other ingredients, and mix intimately.

- II.
- | | |
|--------------------------------|-----------|
| Sweet almonds, blanched | av.oz. 7½ |
| Bitter almonds, blanched | av.oz. 5 |
| Borax, powder | gr. 320 |
| Liniment of camphor | fl.dr. 10 |
| Spermaceti | av.oz. 1¼ |
| Starch | av.oz. 5 |
| Talcum, powder | av.oz. 2½ |
| Rose water | fl.oz. 5½ |
| Oil of bergamot | drops 12 |
| Oil of rose | drops 6 |
| Oil of cassia | drops 4 |
| Oil of cloves | drops 2 |
| Oil of sassafras | drops 2 |
| Oil of ylang ylang | drop 1 |
| Oil of orris, liquid | drop 1 |
| Tincture of civet | drops 10 |
| Tincture of musk | drops 5 |
| Coumarin | gr. 1 |

Mix the first three ingredients and 4 fluidrams of rose water intimately so as to form a perfectly smooth paste. To this mixture add the liniment and spermaceti previously melted together, now incorporate the talcum and starch previously made into a smooth paste with the remaining rose water, and finally add the other ingredients, also previously mixed so as to dissolve the coumarin.

The whole may be colored a pale rose tint, if desired, by means of alkannin.—D.

III.

Bitter almonds, blanched.....	av.oz. 4
Honey	av.oz. 7½
Yolk of egg.....	av.oz. 4
Sweet almond oil	fl.oz. 7
Oil of bergamot	fl.dr. 1
Oil of cloves	fl.dr. 1

Beat the almond to a fine paste, then gradually and thoroughly add the remaining ingredients, which have previously been well mixed.

IV.

Sweet almonds, blanched	av.oz. 8
Bitter almonds, blanched	av.oz. 8
Rose water.....	fl.dr. 8
Eggs, white and yolk.....	8
Borax, powder.....	av.oz. 1
Potassium carbonate, fine powder.....	gr. 150
Glycerin.....	fl.oz. 2½
Corn meal flour.....	av.oz. 8
Tincture of curcuma.....	sufficient to color
Oil of rose.....	drops 20
Oil of bergamot.....	drops 8
Oil of neroli.....	drops 5
Oil of rose geranium.....	drops 2
Oil of sassafras.....	drops 2
Oil of orris, liquid	drop 1
Tincture of musk.....	drops 6
Coumarin.....	gr. 1½
Vanillin.....	gr. 8

Reduce the sweet and bitter almonds with the rose water to a smooth paste, mix the eggs, borax, potassium carbonate, and glycerin, add to the preceding mixture, then incorporate the flour, the curcuma tincture and the perfumes, the latter being previously mixed so as to dissolve the coumarin and vanillin.—D.

Almond Meal. (Mandelklei.)

Sometimes this is prepared from ordinary bitter or sweet almonds and sometimes from almonds from which the oil has been expressed. This is ground fine, sifted, mixed with powdered orris, soap or other ingredients, and perfumed.

I.

Almonds, blanched and powdered	av.oz. 8
White castile soap, dried and powdered	av.oz. 4
Orris root, powder.....	av.oz. 1
Pumice stone, fine powder.....	av.oz. 8
Oil of bitter almonds.....	fl.dr. 1

II.

Sweet almonds, blanched and powdered	av.oz. 8
Wheat flour.....	av.oz. 8
Orris root, powder.....	av.oz. 2
Oil of lemon.....	fl.dr. 2
Oil of bitter almond.....	drops 8

III.

Almond meal, prepared from blanched bitter almonds from which the oil has been expressed, in very fine powder.....	av.oz. 6
Orris root, fine powder	av.oz. 4
Wheat flour.....	av.oz. 4
White castile soap, powder.....	av.oz. 1
Borax, powder.....	av.oz. 1
Oil of bitter almonds	drops 10
Oil of bergamot	fl.dr. 2
Tincture of musk.....	fl.dr. 1
Mix well and pass through a fine sieve.	

IV.

Sweet almonds, blanched and in fine powder	av.oz. 9
Bean flour (or starch).....	av.oz. 9
Orris, fine powder	av.oz. 4
White castile soap, powder	av.oz. 8
Spermaceti.....	av.oz. ¾
Sodium carbonate, dried	av.oz. ¾
Oil of bergamot	fl.dr. 1
Oil of lemon.....	fl.dr. 1
Oil of lavender flowers	fl.dr. 1

Mix all intimately to form a fine powder and sift.

V.

Sweet almonds, blanched and powdered.....	av.oz. 2
Bitter almonds, blanched and powdered	av.oz. 1
Orris root, powder.....	av.oz. 7
Talcum, powder.....	av.oz. 5
White castile soap, powder	av.oz. 1
Borax, powder.....	gr. 100
Oil of bitter almonds	drops 10
Oil of neroli.....	drops 10
Tincture of musk.....	drops 10

To reduce the cost the almonds may be replaced by almond press cake (deprived of oil), orris root by wheat flour, and the volatile oils reduced or changed.

VI.

Cacao butter	av.oz. 2
Talcum, powder.....	av.oz. 4
Bean flour (or starch).....	av.oz. 20
Sweet almonds, blanched and powdered	av.oz. 10
Glycerin.....	fl.dr. 18
Cologne water.....	fl.oz. 2
Coumarin	gr. 2
Oil of bitter almonds.....	drops 25
Tincture of ambergris.....	drops 6

Melt the cacao butter, thoroughly, incor-

porate the talcum, then add the bean flour (or starch) and the almonds. Dissolve the coumarin and oils in the cologne water, add the glycerin and tincture, and incorporate this mixture with the preceding combination—D.

Complexion or Face Powders.

Complexion powders contain such constituents as talcum, starch, precipitated chalk, bismuth subnitrate, oxide, hydrate, subcarbonate or oxychloride, zinc oxide, magnesium carbonate or oxide, and orris root, together with suitable perfume and with coloring matter if a colored powder be desired. These solids must be in the form of fine powder, must be intimately mixed, and then sifted through a fine bolting cloth sieve; whatever fails to pass through the sieve must be returned to the mortar and be still further triturated until all will pass through. If colored powder is to be prepared, the coloring matter should be added to the powder before sifting. After sifting, the perfume may be added; the whole should be again passed through the sieve to break up any lumps which may have formed by the addition of the moist perfume to the dry powder.

If a flesh-colored powder is desired, carmine is employed as the coloring agent. Sometimes a brunette powder is desired and then burnt umber is used as the coloring agent; cream powder is prepared by the use of cadmium yellow or chrome yellow (lead chromate), a trace of carmine being added sometimes. In the formulas given below, no coloring agents are mentioned, it being intended that these should be added only as desired.

In preparing face powders, the best materials should be employed. For example, Hubbuck's zinc oxide only should be used. The best talcum is what is known as Venetian chalk; the best precipitated chalk is the kind known as the English; the preferred bismuth subnitrate should be a very light variety, etc.

Some face powders are made with a lead salt; the latter should, owing to its poisonous character, never be employed.

I.	Talcum, powder.....av.oz.	10
	Rice flour.....av.oz.	10
	Zinc oxide.....av.oz.	5

Mix well and perfume with a mixture of oils of bergamot, ylang ylang and neroli.

This preparation is known as "Sarah Bernhardt's Face Powder," also as "la Diaphane."

Any other perfume may be used if desired.

II.	Talcum, powder.....av.oz.	15
	Starch.....av.oz.	1½
	Orris root.....av.oz.	1½
	Oil of bergamot.....drops	12

III.	Zinc oxide.....av.oz.	4
	Precipitated chalk.....av.oz.	24
	Talc, powder.....av.oz.	4
	Starch.....av.oz.	8
	Essence of rose.....fl.dr.	2
	Essence of jasmine.....fl.dr.	2
	Essence of orange flowers.....fl.dr.	2
	Essence of cassie.....fl.dr.	2
	Tincture of musk.....fl.dr.	1

If this powder be too light, a portion of the precipitated chalk may be replaced with prepared chalk.

IV.	Talcum, powder.....av.oz.	5
	Zinc oxide.....av.oz.	5
	Chalk, prepared.....av.oz.	2½
	Starch.....av.oz.	15
	Essence of jasmine.....fl.dr.	4
	Oil of bergamot.....drops	15
	Oil of rose.....drops	8
	Oil of ylang ylang.....drops	2
	Oil of neroli.....drops	8
	Oil of orris.....drop	1
	Tincture of musk.....drops	5

V.	Talcum, powder.....av.oz.	16
	Bismuth oxide.....av.oz.	1
	Zinc oxide.....av.oz.	1

Perfume to suit.

VI.	Zinc oxide.....av.oz.	4
	Rice powder.....av.oz.	14
	Precipitated chalk.....av.oz.	4
	Talcum powder.....av.oz.	2
	Orris root, powder.....av.oz.	2
	Perfume.....sufficient	

VII.	Zinc oxide.....av.oz.	2
	Orris root, powder.....av.oz.	2
	Rice flour.....av.oz.	16
	Oil of rose.....drops	9
	Oil of rose geranium.....drops	3
	Oil of ylang ylang.....drop	1
	Coumarin.....gr.	½
	Acetic ether.....drops	10

Mix the first three ingredients, mix the

other ingredients so as to dissolve the coumarin, and incorporate this mixture with the powder.—D.

VIII.

Zinc oxide.....	av.oz.	2
Orris root, powder.....	av.oz.	4
Talcum, powder.....	av.oz.	4
Starch.....	av.oz.	10
Essence of jasmine.....	fl.dr.	2½
Oil of rose.....	drops	5
Oil of bergamot.....	drops	5
Oil of ylang ylang.....	drop	1
Tincture of musk.....	drops	5
Coumarin.....	gr.	½

Mix the first four ingredients intimately, dissolve the coumarin in the essence, add the oils and tincture, and incorporate this mixture with the powder.—D.

IX.

Zinc oxide.....	av.oz.	4
Orris root, powder.....	av.oz.	2
Starch.....	av.oz.	7
Talcum, powder.....	av.oz.	7
Oil of bergamot.....	drops	20
Oil of rose.....	drops	10
Oil of neroli.....	drops	5
Tincture of musk.....	drops	4
Coumarin.....	gr.	½
Acetic ether.....	sufficient	

Mix the first four ingredients intimately, add the oils, tincture and coumarin, first dissolving the latter in a small amount of acetic ether.—D.

X.

Zinc oxide.....	av.oz.	4
Starch.....	av.oz.	6
Talcum, powder.....	av.oz.	4
Oil of bergamot.....	drops	20
Oil of rose.....	drops	8
Oil of lemon.....	drops	4
Oil of orris, liquid.....	drop	1
Tincture of ambergris.....	drops	10
Coumarin.....	gr.	½
Acetic ether.....	m.	50

Mix the first three ingredients intimately to smooth powder, and add the remaining ingredients previously mixed, so as to dissolve the coumarin. One-half of the zinc oxide may be replaced by bismuth subnitrate.—D.

XI.

Magnesium carbonate.....	av.oz.	8
Talcum, powder.....	av.oz.	8
Oil of rose.....	drops	8
Oil of neroli.....	drops	20
Essence of jasmine.....	fl.dr.	4
Tincture of musk.....	fl.dr.	1

XII.

Bismuth subcarbonate.....	av.oz.	¼
Zinc oxide.....	av.oz.	4
Talcum, powder.....	av.oz.	5
Precipitated chalk.....	av.oz.	5
Starch.....	av.oz.	7
Oil of rose geranium.....	drops	40

XIII.

Lanolin, anhydrous.....	av.oz.	1
Starch.....	av.oz.	1
Talcum, powder.....	av.oz.	20
Coumarin.....	gr.	24
Oil of rose.....	drops	16

The lanolin and the perfume are gradually mixed, the talcum, and then the starch is added.

Lanolin may also be incorporated in face powders by dissolving some volatile solvent like ether, chloroform, or benzine, incorporating this solution quickly with magnesia, chalk or other powder, allowing the solvent to vaporize, and incorporating other suitable ingredients with the residue.

Lanolin is introduced into some face powders owing to the dryness of the skin or to prevent the latter from becoming dry and scaly. The fat imparts to the powder a desirable smoothness, increases the power to adhere to the skin, and preserves the latter in a smooth and supple condition.

Complexion Tablets.

. Any of the preceding powders may be converted into the tablet or cake form by adding a small amount of powdered tragacanth, beating into a stiff paste with water, pressing into suitable molds, and then drying.

Toilet and Nursery Powders.

I.

Talcum.....	av.oz.	11
Salicylic acid.....	gr.	165
Boric acid.....	av.oz.	1¼

All should be in fine powder and should be mixed intimately.—N. F.

II.

Talcum.....	av.oz.	11
Starch.....	av.oz.	1¼
Salicylic acid.....	gr.	165

Prepare like the preceding.—Germ. Pharm.

This preparation as well as the preceding may be perfumed as desired; or they may also be carbolated.

III.

Starch	av.oz. 15
Orris root.....	av.oz. 1
Talcum.....	av.oz. ½
Oil of lemon.....	fl.dr. ½
Oil of bergamot.....	fl.dr. ½
Oil of neroli.....	drops 15
Oil of bitter almond.....	drops 3
Oil of verbenia.....	drops 3

The first three must be in very fine powder and the whole should be well mixed, after which it should be sifted through a very fine sieve.

IV.

Salicylic acid.....	gr. 60
Starch.....	av.oz. 12
Talcum.....	av.oz. 4
Orris root.....	av.oz. 1
Oil of bergamot.....	drops 8
Oil of neroli.....	drops 4
Tincture of musk.....	drops 5

Mix and reduce to impalpable powder.

V.

Orris, powder.....	av.oz. ½
Starch, powder.....	av.oz. 16
Oil of rose.....	drops 2
Oil of lavender flowers.....	drops 4
Oil of bergamot.....	drops 15
Tincture of musk.....	drops 15
Essence of violet.....	drops 15

VI.

Camphor.....	av.oz. ¾
Zinc oxide.....	av.oz. 1
Starch.....	av.oz. 4

Mix well, reduce to powder, and sift through bolting cloth.

This is known as "McCall Anderson's Dusting Powder."

VII.

Talcum.....	av.oz. 1
Boric acid.....	av.oz. 2
Zinc oxide.....	av.oz. 3
Rice powder.....	av.oz. 8
Perfume as desired.	

VIII.

Fuller's earth.....	av.oz. 8
Talcum.....	av.oz. 8
Oil of lavender.....	drops 5

Mix the first two ingredients in fine powder and incorporate the oil.

IX.

Wheat flour.....	av.oz. 24
Orris root, powder.....	av.oz. 2
Oil of lemon.....	drops 15
Oil of bergamot.....	drops 15
Oil of neroli.....	drops 8
Oil of bitter almond.....	drop 1
Tincture of musk.....	drops 8

X.

Starch.....	av.oz. 24
Orris root.....	av.oz. 2
Oil of lemon.....	drops 20
Oil of bergamot.....	drops 20
Oil of neroli.....	drops 10
Oil of bitter almond.....	drop 1
Tincture of musk.....	fl.dr. ½

Mix the starch and orris in very fine powder and add the other ingredients.

XI.

Fuller's earth.....	av.oz. 9
Boric acid.....	av.oz. 1½
Talcum.....	av.oz. 3
Starch.....	av.oz. 9
Orris root.....	av.oz. 1½
Oil of bergamot.....	fl.dr. 2

XII.

Fuller's earth.....	av.oz. 2
Talc, powdered.....	av.oz. 9
Starch, powdered.....	av.oz. 9

The two preceding, being in very fine powder and perfumed, are known as "Medicated Fuller's Earth" Powder.

Liquid Cosmetics.

Any of the various mineral powders used as cosmetics may be converted into lotions by mixing with water, which may or may not be perfumed or colored; a small amount of glycerin is frequently added. The powders do not dissolve, but are simply suspended by shaking.

Substances suitable for the purpose indicated are: Prepared chalk, magnesium carbonate, zinc oxide, the oxychloride or subnitrate of bismuth. The last two resemble chalk in density, but much excel it in whiteness.

Unscrupulous or careless persons sometimes use white lead in the preparation of cosmetics, and calomel is said to be the chief ingredient of a proprietary cosmetic that has had some reputation. The character of both these substances renders their use for such purposes dangerous, as even external application may produce the constitutional effects of lead or mercury.

In making these preparations a perfectly smooth mixture must be made by long trituration, preferably triturating the powder first with the glycerin. If a white preparation is desired, no coloring agent is added; but if a flesh-colored preparation, then solu.

tion of carmine or an alcoholic solution of eosin must be added. No coloring agent or perfume is mentioned in the formulas below, as these may be added as desired.

These liquid cosmetics are usually known by such titles as "enamel," "oriental cream," "pearl cream," "liquid pearl," "balm," "liquid face paint," etc. They are usually dispensed in white (opaque) bottles.

- I.

Calomel	av.oz. 2
Bismuth subnitrate.....	av.oz. 1
Zinc oxide.....	av.oz. 1
Glycerin.....	fl.oz. 2
Water enough to make.....	fl.oz. 14
- II.

Zinc oxide.....	av.oz. 2
Glycerin.....	fl.oz. 6
Water.....	fl.oz. 8
Oil of bergamot.....	drops 4
Oil of lemon.....	drops 4
- III.

Bismuth oxychloride.....	av.oz. 1½
Precipitated chalk.....	av.oz. 8
Glycerin.....	fl.dr. 6
Water.....	fl.oz. 15
- IV.

Bismuth subnitrate	av.oz. 2
Glycerin.....	fl.oz. 1
Water, enough to make.....	fl.oz. 16
- V.

Zinc oxide.....	av.oz. 2¼
Precipitated chalk.....	av.oz. 1½
Alcohol.....	fl.oz. 8
Water.....	fl.oz. 12
- VI.

Bismuth oxychloride.....	av.oz. 8½
Glycerin.....	fl.oz. 2½
Alcohol.....	fl.oz. 2½
Water.....	fl.oz. 10

Face Bleach.

Under this name are marketed a number of preparations of which the principal or active constituent is corrosive sublimate. The use of such preparations is not countenanced, and the following formula is given only because the preparation is in occasional demand:

- | | |
|--------------------------------|-----------|
| Mercury bichloride..... | gr. 1 |
| Emulsion of bitter almond..... | fl.oz. 12 |
| Tincture of benzoin..... | fl.dr. 1 |

The mercury salt is dissolved in the emulsion and the mixture gradually added to the tincture. This preparation does not keep long; should be kept in small opaque vials and be dispensed only with a "shake well" label.—D.

The emulsion may be prepared from one av. ounce of almond.

Other "bleaches" contain from one-half to one grain corrosive sublimate to the fluid-ounce.

The above is known as Hebra's Oriental Cosmetic Water.

Applications for Blackheads or Comedones.

- I. Before retiring bathe the parts affected with very hot water, dry well, then rub thoroughly with a lotion consisting of:

- | | |
|---------------------------------|----------|
| Ether | fl.oz. 1 |
| Alcohol..... | fl.dr. 6 |
| Aromatic spirit of ammonia..... | fl.dr. 2 |

The object of this is to dissolve the sebaceous deposits. To further soften and loosen the same, a paste is applied, composed of:

- | | |
|------------------|------------|
| Acetic acid..... | dr. 2 |
| Glycerin..... | dr. 8 |
| China clay..... | dr. 4 |
| Perfume..... | sufficient |

This paste is removed by washing on the following morning. After a few days the comedones can be easily expressed, if necessary, with the aid of a watch key.

Friction with a Turkish towel, the use of soap containing tar, resorcin or ichthyol, rubbing with resorcin solution in spirit of ether, etc., constitute a good after treatment.

- II.

Resorcin	gr. 60
Zinc oxide.....	gr. 120
Starch.....	gr. 120
Petrolatum	gr. 240

- III.

Ammonium carbonate.....	gr. 20
Ether	fl.oz. 1
Water	fl.oz. 1

 Apply several times daily.

- IV.

Lanolin	gr. 100
Petrolatum	gr. 200
Hydrogen peroxide.....	fl.dr. 4

 Apply at night.

- V.

Petrolatum	av.oz. 1
Lanolin (anhydrous).....	av.oz. 1
Hydrogen peroxide.....	fl.oz. 1
Acetic acid.....	fl.dr. 1

VI. The preparation employed for the removal of pimples may usually also be used against blackheads.

Freckle Remedies.**I.**

Borax.....	gr. 60
Potassium chlorate.....	gr. 240
Alcohol.....	fl.dr. 1
Glycerin.....	fl.dr. 2
Rose water, enough to make.....	fl.oz. 3

Dissolve as much as possible of the two salts and filter.

Label: Apply with a soft sponge several times a day.

This forms a mild harmless lotion and frequently answers completely in mild cases. The same remarks apply to the next preparation.

II.

Sodium sulphocarbonate.....	gr. 50
Glycerin.....	fl.oz. 2
Rose water.....	fl.oz. 1
Alcohol.....	fl.oz. 1

III.

Salicylic acid.....	gr. 60
Bay rum.....	fl.oz. 4

Label: Apply night and morning with a soft cloth or sponge.

This lotion soon produces a slight roughness of the skin, which should be subdued by the use of glycerite of starch. Care must be taken not to get any of it too near the eyes, nostrils and lips. Should the skin become red and irritated, the lotion must be suspended for a few days to allow the inflammation to subside.

IV.

Mercuric chloride.....	gr. 6
Alcohol.....	fl.oz. 1
Green soap.....	av.oz. 2
Oil of lavender.....	drops 10

Label: Apply at night and wash off in the morning. Some kind of glycerin cream should be applied during the day.

This is to be used only in obstinate cases. The same applies to the next formula.

V.

Corrosive sublimate.....	gr. 8
Distilled water.....	fl.oz. 7
Spirit of camphor.....	fl.dr. 4
Rose water.....	fl.dr. 6

Apply upon three or four thicknesses of linen, cut to fit, at night. Remove when dry. After a few nights redness of the epidermis is induced, when it peels off in fine scales; then may be used an ointment composed of.

Spermaceti.....	gr. 120
White wax.....	gr. 120
Oil of sweet almonds.....	fl.dr. 4
Salicylic acid.....	gr. 16
White precipitate.....	gr. 4

Rub this on, night and morning, for five minutes, with a clean finger.

VI.

Copper oleate.....	gr. 30
Petrolatum.....	av.oz. 1

Apply twice a day.

VII.

Zinc sulphocarbonate.....	gr. 15
Glycerin.....	fl.dr. 4
Rose water.....	fl.oz. 2½
Alcohol.....	fl.dr. 2
Cologne water.....	drops 15
Spirit of camphor.....	drops 15

Dissolve the zinc salt in the glycerin and rose water and add the other ingredients.

In using wash the face morning and evening with soap, dry well, apply the solution, and allow the latter to dry upon the skin.—D.

This is intended for the removal of summer freckles.

VIII.

Zinc sulphocarbonate.....	gr. 60
Oil of lemon.....	fl.dr. 1
Alcohol.....	fl.oz. 1
Collodion flexible.....	fl.oz. 5

After bathing the face with hot water and drying, apply with a brush.

IX.

Lactic acid.....	fl.oz. 1
Glycerin.....	fl.oz. 1

Apply once a day.

X.

Citrin ointment.....	gr. 60
Cold cream.....	gr. 420

Apply night and morning.

XI.

Zinc sulphate.....	gr. 20
Cold cream.....	av.oz. 1

Dissolve the salt in a small amount of water and incorporate with the ointment.

Use like the preceding.

XII. Some of the preparations intended to remove tan or sunburn may frequently also be employed to remove freckles.

Applications for Pimples or Acne.**I.**

Mercuric iodide.....	gr. 3
Potassium iodide.....	gr. 20
Sodium bicarbonate.....	gr. 20
Aromatic spirit of ammonia.....	fl.dr. ½
Bay rum.....	fl.oz. 1
Camphor water enough to make.....	fl.oz. 4

II.

Corrosive sublimate.....gr. 1
Compound spirit of lavender....fl.dr. 2
Glycerin.....fl.dr. 6

Mix and dissolve.

Apply with a brush, using with great caution.

III.

Carbolic acid.....drops 15
Borax.....gr. 60
Glycerin.....fl.dr. 4
Tannin.....gr. 80
Alcohol.....fl.oz. 1
Rose water.....fl.oz. 2½

Mix and dissolve.

Apply night and morning.

IV.

Ichthyol.....gr. 90
Ether.....fl.dr. 2½
Alcohol.....fl.dr. 4

To be used externally, dabbing over the spots several times daily.

V. When there is much pustulation the following ointment may be used:

Bismuth subnitrate.....gr. 80
Ammoniated mercury.....gr. 80
Ichthyol.....gr. 80
Petrolatum.....gr. 360

For external use. Every evening at bedtime, the pustules should be smeared with this ointment.

VI. Most of the preparations intended for the removal of blackheads may also be used against pimples.

In the treatment of acne it may be found advisable to assist the action of external remedies by the exhibition of internal medicines.

Applications for Tan and Sunburn.

I.

Hydrochinone.....gr. 48
Glacial phosphoric acid.....gr. 80
Glycerin.....fl.dr. 4
Water, enough to make.....fl.oz. 6

Mix and dissolve.

This is to be applied twice daily, first washing and drying the skin carefully.

II. Under the name albadermine has been devised a foreign process for the removal of tan, sunburn, and summer freckles which requires the use of two solutions:

Solution "A."

Potassium iodide.....gr. 120
Iodine.....gr. 6
Glycerin.....fl.dr. 3
Infusion of rose.....fl.oz. 4

Dissolve the potassium iodide in a small quantity of the infusion and one fluidram of the glycerin; with this fluid moisten the iodine in a glass mortar and rub it down, gradually adding more liquid until complete solution has been obtained; then stir in the remainder of the ingredients, and bottle the mixture.

Solution "B."

Sodium hyposulphite.....gr. 240
Rose water.....fl.oz. 16

Dissolve and filter.

With a small camel's hair pencil or piece of fine sponge apply a little of "A" to the tanned or freckled surface, until a slight but tolerably uniform brownish-yellow skin has been produced. At the expiration of fifteen or twenty minutes moisten a piece of cambric, lint or soft rag with "B" and lay it upon the affected part, removing, squeezing away the liquid, soaking it afresh, and again applying until the iodine stain has disappeared. Repeat the entire process thrice daily, but diminish the frequency of the application if tenderness be produced. In the course of from three or four days to as many weeks the discoloration will either have disappeared entirely, or its intensity will be very greatly diminished.

III.

Sweet almonds, blanched....av.oz. 1
Bitter almonds, blanched....av.oz. ¼
Corrosive sublimate.....gr. 15
Alcohol.....fl.dr. 2
Water.....sufficient

Mix and crush the almonds and add enough water so as to obtain 16 fluidounces of emulsion. To the latter add the corrosive sublimate dissolved in the alcohol.

This preparation is well known under the name "Gowland's Lotion." It should be applied at night and be washed off in the morning, after which an emollient preparation like a mixture of glycerin and rose water, or cold cream, should be applied.

IV.

Borax.....gr. 320
Zinc oxide.....gr. 320
Glycerin.....fl.oz. 2½
Bay rum.....fl.oz. 2½
Distilled water.....fl.oz. 10

Mix and apply freely 5 or 6 times daily.

V. Most of the preparations employed in the

treatment of freckles may also be used for the removal of tan and sunburn.

Miscellaneous Cosmetic Preparations.

Under this heading are grouped a number of preparations which are demanded occasionally and cannot be appropriately classed under any other heading.

I.—A. Kummerfeld's Cosmetic or Toilet Water.

Sulphur, precipitated.....	gr. 150
Glycerin.....	fl.dr. 5
Camphor.....	gr. 15
Cologne water.....	fl.oz. 1
Borax.....	gr. 150
Distilled water.....	fl.oz. 14½
Tincture of musk.....	drops 2

Triturate the sulphur to a smooth paste with the glycerin, dissolve the camphor in the cologne water and the borax in the distilled water, mix all, and add the tincture.

The sulphur will be found at both the bottom and the top of the mixture. This may be overcome, in a great measure at least, by adding to the above mixture 1 fluidounce of ether.—D.

B.

Camphor, fine powder.....	gr. 90
Acacia, powder.....	gr. 180
Sulphur, precipitated.....	av.oz. 2½
Rose water.....	fl.oz. 8
Lime water.....	fl.oz. 9

Mix the first three ingredients intimately, gradually add the rose water with constant trituration, and then add the lime water.—D.

Another formula uses the same amount of solids for 80 fluidounces of each of the waters.—H.

II. Eau de Lys de Lohse.

Zinc oxide.....	gr. 75
Talcum, powder.....	gr. 75
Glycerin.....	fl.dr. 5
Rose water.....	fl.oz. 15
Tincture of benzoin.....	fl.dr. 2½
Essence of jasmine.....	m. 40
Coumarin sugar.....	gr. 8
Tincture of musk.....	drops 2
Spirit of orris.....	drops 30
Spirit of ylang ylang.....	drops 8

Triturate the first two ingredients with the glycerin, add the tincture of benzoin, incorporating thoroughly and then add the remaining ingredients with trituration.—D.

III. Hebra's Cosmetic Liniment or Sulphur Paste.

Potassium carbonate.....	av.oz. 5
Glycerin.....	fl.oz. 4
Sulphur, precipitated.....	av.oz. 5
Water.....	fl.oz. 1½
Alcohol.....	fl.oz. 4
Ether.....	fl.oz. 6½

Dissolve the potassium carbonate in the glycerin, incorporate the sulphur and add the remaining ingredients previously mixed.

Used against flesh worms. Apply at night and wash off in the morning.—D.

IV. Lilionese (or Lilionese Cosmetic Water).

Borax.....	gr. 110
Potassium carbonate.....	gr. 40
Rose water.....	fl.oz. 15
Cologne water.....	fl.dr. 4
Talcum, powder.....	gr. 720
Glycerin.....	fl.dr. 5
Tincture of benzoin.....	fl.dr. 3

Dissolve the borax and potassium carbonate in the rose water and add the cologne water previously mixed with the tincture; rub the talcum to a smooth paste with the glycerin and gradually add to it the previous mixture.—D.

V. May Dew Water.

Borax.....	gr. 40
Sodium hyposulphite.....	gr. 375
Glycerin.....	fl.dr. 5
Distilled water.....	fl.oz. 14
Cologne water.....	fl.oz. 1
Oil of neroli.....	drops 5
Oil of ylang ylang.....	drop 1
Essence of jasmine.....	drops 10
Tincture of ambergris.....	drops 2
Tincture of musk.....	drop 1

Mix the first four ingredients and add the remaining ingredients previously mixed.—D.

VI.—A. Lait Virginal (Virgin's Milk).

Tincture of tolu.....	fl.dr. 2½
Tincture of benzoin.....	fl.dr. 2½
Spirit of soap.....	fl.dr. 2½
Glycerin.....	fl.dr. 5
Borax.....	gr. 110
Orange flower water.....	fl.oz. 3½
Rose water.....	fl.oz. 5
Distilled water.....	fl.oz. 8½
Essence of jasmine.....	m. 40
Oil of rose.....	drops 2
Spirit of orris.....	drops 30
Tincture of civet.....	drops 2
Coumarin sugar.....	gr. 4

Dissolve the borax in the water and add the solution to the tinctures by trituration,

then add the spirit of soap and the other waters and finally the perfumes.—D.

B.

Tincture of benzoin.....fl.dr. 3½
Tincture of tolu.....fl.dr. 5
Rose or orange flower water.....fl.oz. 15

Mix the two tinctures and add the water very slowly in a thin stream with vigorous and constant stirring.

C.

Tincture of benzoin.....fl.dr. 4
Glycerin.....fl.dr. 4
Rose water.....fl.oz. 16

Mix the first two ingredients and add the water gradually with vigorous stirring.

D.

Tragacanth, powder.....gr. 10
Glycerin.....fl.dr. 7
Rose water.....fl.oz. 15
Tincture of benzoin.....fl.dr. 3½

Make a smooth mixture of the glycerin, gum and water, and then thoroughly incorporate the tincture.

VII.

Eau d'Hebe.

Oil of lavender flowers.....drops 25
Oil of lemon.....drops 10
Oil of bergamot.....drops 5
Oil of rose.....drops 8
Alcohol.....fl.oz. 5
Diluted acetic acid.....fl.oz. 10

Mix the oils with the alcohol, add the acid, and filter.—H.

VIII. Copeland's Cosmetic Water.

Emulsion of bitter almonds.....fl.oz. 3½
Rose water.....fl.oz. 4
Orange flower water.....fl.oz. 4
Borax.....gr. 60
Tincture of benzoin.....fl.dr. 2

The emulsion may be prepared from one-half av. ounce of bitter almonds.

IX. Goddard's Cosmetic Lotion.

Corrosive sublimate.....gr. 6
Tincture of benzoin.....fl.dr. 2
Rose water.....fl.oz. 6

Rouges.

These are preparations of deep red tint employed usually for heightening the color of the cheeks. They may be in liquid, ointment, or tablet forms. The coloring agent is either carmine, eosin, or rosanilin. The liquid preparations receive a fanciful name like "vinegar rouge," "maiden's blush," or "bloom of roses."

I.

Carmine.....gr. 30
Ammonia water.....fl.dr. 1
Rose water.....fl.oz. 4
Spirit of rose.....fl.dr. 1
Mix, set aside 24 hours, agitating frequently, and filter.

II.

Eosin.....gr. 16
Water.....fl.dr. 1½
Glycerin.....fl.dr. ½
Alcohol.....fl.oz. 3
Cologne water.....fl.oz. 2½
Mix and dissolve.

III.

Rosanilin.....gr. 5
White wax.....gr. 50
Spermaceti.....gr. 50
White petrolatum.....gr. 880
Alcohol.....fl.dr. ½
Perfume.....to suit

Dissolve the dye in alcohol, add this solution to the fats previously melted, and incorporate the whole together, continuing the stirring until the mixture has cooled.

IV.

Eosin.....gr. 3
Rosanilin.....gr. 3
White wax.....gr. 50
Spermaceti.....gr. 50
White petrolatum.....gr. 880
Oil of lavender flowers.....drops 2
Oil of bergamot.....drop 1
Alcohol.....fl.dr. ½

Prepare like the preceding.

V.

Eosin.....gr. 5
Wax.....gr. 50
Spermaceti.....gr. 50
Petrolatum, white.....gr. 880
Oil of rose.....drops 2
Alcohol.....fl.dr. ½

Prepare like the preceding.

VI.

Carmine.....gr. 90
Ammonia water.....fl.dr. 3
Talcum, powder.....av.oz. 3
Dextrin.....av.oz. 1
Oil of bergamot.....drops 6
Oil of rose.....drops 2
Oil of sassafras.....drop 1
Simple syrup.....sufficient

Mix the talcum and dextrin, add the oils, then incorporate the carmine previously dissolved in the ammonia, now add enough syrup to make a stiff mass and form into cakes.—D.

Theatrical Grease Paints.

In preparing these the solid fats should be melted first, the fixed oils then added, incorporate the coloring agent, add the perfumes, and form into sticks if desired.

I. White:

- A.
- | | |
|---------------------------|-----------------|
| Prepared chalk..... | av.oz. 4 |
| Zinc oxide..... | av.oz. 4 |
| Bismuth subnitrate..... | av.oz. 4 |
| Asbestos, powder..... | av.oz. 4 |
| Sweet almond oil..... | about fl.oz. 2½ |
| Camphor..... | gr. 40 |
| Oil of peppermint..... | fl.dr. 3 |
| Ess. bouquet extract..... | fl.dr. 3 |

Sufficient almond oil should be used to form a mass of proper consistence.

- B.
- | | |
|--------------------------------|----------|
| White wax..... | av.oz. 2 |
| Olive or sweet almond oil..... | fl.oz. 3 |
| Talc, powder..... | fl.oz. 1 |
| Zinc oxide..... | fl.oz. ½ |

- C.
- | | |
|--------------------------|----------|
| Bismuth oxychloride..... | av.oz. 5 |
| White wax..... | av.oz. 2 |
| Sweet almond oil..... | fl.oz. 5 |

- D.
- | | |
|------------------------|-----------|
| Zinc oxide..... | av.oz. 1 |
| Olive oil..... | fl.oz. 1½ |
| Paraffin wax..... | av.oz. 3½ |
| Cacao butter..... | av.oz. 4 |
| Oil of bergamot..... | drops 5 |
| Oil of rose..... | drops 5 |
| Oil of lemon..... | drops 3 |
| Tincture of civet..... | drops 5 |

—D.

II.—Red:

- A. Same as any of above, coloring with an ammoniacal solution of carmine.

- B.
- | | |
|-----------------------|----------|
| Cacao butter..... | av.oz. 4 |
| White wax..... | av.oz. 4 |
| Olive oil..... | fl.oz. 2 |
| Oil of rose..... | drops 3 |
| Oil of bergamot..... | drops 3 |
| Oil of neroli..... | drops 2 |
| Tincture of musk..... | drops 2 |
| Carmine..... | gr. 90 |
| Ammonia water..... | fl.dr. 3 |

Melt the cacao butter and wax, add olive oil, stir in the carmine first dissolved in the ammonia, add the volatile oils and tincture, and form into sticks.—D.

- C.
- | | |
|---|---------------|
| Carmine..... | gr. 112 |
| Water of ammonia, sufficient to dissolve about..... | fl.oz. 1 or 2 |
| Rub intimately with powdered talcum | |

(av.oz. 1½) till dry; rub with this vehicle.

- | | |
|--------------------------------|-----------|
| White wax..... | 13½ parts |
| Olive or sweet almond oil..... | 20½ parts |

The latter two should be first melted together.

III.—Pink:

- | | |
|------------------------------|-----------|
| Zinc oxide..... | av.oz. 2½ |
| Bismuth subnitrate..... | av.oz. 2½ |
| Asbestos, powder..... | av.oz. 2½ |
| Sweet almond oil, about..... | fl.oz. 1 |
| Camphor..... | av.oz. ½ |
| Oil of peppermint..... | fl.dr. 4 |
| Ess. bouquet extract..... | fl.dr. 2 |
| Eosin..... | gr. 5 |

IV.—Black:

- A.
- | | |
|-----------------------|------------|
| Soot..... | av.oz. 2 |
| Sweet almond oil..... | fl.oz. 2 |
| Cacao butter..... | av.oz. 6 |
| Perfume..... | sufficient |

The soot should be derived from burning camphor and repeatedly washed with alcohol.

The soot should be triturated to a smooth mixture with the oil; then add to the melted cacao butter, add the perfume, and form into sticks.

- B.
- | | |
|----------------------|-----------|
| Lampblack, best..... | av.oz. 1 |
| Cacao butter..... | av.oz. 6 |
| Oil of neroli..... | fl.dr. 2½ |

Melt the cacao butter, add the lampblack and while cooling make an intimate mixture, adding the perfume toward the last.

- C.
- | | |
|-----------------------|-----------|
| Lampblack..... | av.oz. ½ |
| Olive oil..... | fl.oz. 2½ |
| Cacao butter..... | av.oz. 3½ |
| White wax..... | av.oz. 4 |
| Oil of rose..... | drops 6 |
| Oil of bergamot..... | drops 2 |
| Tincture of musk..... | drops 1 |

Triturate the lampblack to a smooth mixture with the olive oil, melt the wax and cacao butter, add the oily mixture, then the volatile oils and tincture, and form into sticks.

V.—Brown:

A brown paint may be prepared according to either of the formulas of the preceding, substituting finely levigated burnt umber, sienna or similar earth for the lampblack.

Depilatories.

Depilatories are preparations for removing hair. They are usually in the form of powder, which should be in impalpable con-

dition. The main or active ingredient is usually a sulphide or sulphhydrate of one of the alkalies or alkaline earths, although the older depilatories were made with caustic alkalies. In using these depilatories they should be made into thin paste with water, applied in a thin layer to the skin, allowed to remain a few minutes and then scraped off with a blunt instrument, when the hair will have softened sufficiently to remove without pain.

Too long contact of depilatories with the skin should be avoided, as they are liable to cause erosions and even ugly sores. To avoid any bad after-effect, the skin should be thoroughly cleansed and then anointed with a bland oil.

I.

Prepare sulphuretted baryta (barium sulphide) by making heavy spar (natural barium sulphate) and charcoal into a stiff paste by means of linseed oil, forming this mass into cylindrical rolls and subjecting to the heat of a coal fire. The dark gray coke, after pulverizing, is then made up as follows:

Crude sulphuretted baryta.....gr. 120
Zinc oxide.....gr. 60
Starch.....gr. 60

With the aid of water this powder is converted into a soft paste, and applied to a hairy skin in a layer as thick as a straw. After drying (about ten minutes), the pellicle is scraped off with a paper knife, or similar blunt instrument, and with it the hair. The face should be washed clean and anointed with some bland oil.

Ordinary barium sulphide may be used in place of the sulphuretted baryta.

II.

Sodium sulphhydrate.....gr. 100
Slaked lime.....gr. 80
Starch.....gr. 20
Lime water.....fl.dr. 4

When using apply this like the paste formed in the preceding formula.

Sodium sulphhydrate is prepared by supersaturating at ordinary temperature a solution of sodium hydrate of spec. grav. 1.35 (made from 1 av. ounce of caustic soda and 2 fluidounces of water), and then setting aside the well-closed jar for several days in a cold, dark place, when the crystals formed may be

removed and preserved in a well-closed vial, protected from the light.

III.

Sodium sulphhydrate.....gr. 100
Chalk.....gr. 800

Make into a paste with water and use like

No. I.

IV.

Sodium sulphhydrate.....gr. 180
Slaked lime.....av.oz. 1
Starch.....av.oz. 1

Use like the preceding.

V.

Barium sulphide.....gr. 80
Precipitated chalk.....gr. 400

Use like the preceding, removing in 8 or 4 minutes.

The barium sulphide should be absolutely dry.

VI.

Orpiment.....gr. 120
Slaked lime.....gr. 800

Use like the preceding.

VII.

Orpiment.....gr. 60
Slaked lime.....gr. 800
Starch.....gr. 180

Use like the preceding.

VIII.

Quicklime.....gr. 120
Sodium sulphide.....gr. 240
Starch.....gr. 80
Orris root, powder.....gr. 40

Rub the necessary portion of this powder into a thin paste with water, and apply as directed in formula 1.

IX.

Calcium sulphide.....gr. 120
Glycerin.....fl.dr. 2
Orris root powder.....gr. 120
Oil of lavender.....drops 5
Oil of ylang ylang.....drops 2
Camphor water.....fl.dr. 4

Make a smooth paste and use as directed in formula 1.

X.

Strontium sulphide.....g. 800
Zinc oxide.....gr. 100
Starch.....gr. 100
Menthol.....gr. 5

Mix intimately, reducing to very fine powder.

In using this preparation, make a paste with water and apply as in No. 1.

Strontium sulphide has the advantage over

barium sulphide of being non-poisonous and over almost all other depilatory agents of not evolving hydrogen sulphide.

XI.

Barium sulphide.....	gr. 120
Starch.....	gr. 200
Orris root, powder.....	gr. 200

Make a paste with water and use as in formula I.

XII.

Charcoal.....	gr. 8
Quicklime.....	gr. 30
Sodium carbonate.....	gr. 60
Glycerin.....	fl.dr. 1
Lard.....	av.oz. 1

This is applied to the skin for ten or twelve days, when the latter assumes a rose tint and the hairs may be extracted.

XIII.

Iodine collodion, Part I, may be employed as a depilatory. In using apply once daily for about 4 days, when the film may be removed and the hair will come off with it.

Liquid Soaps.

Liquid soaps are solutions of soap in alcohol, water, glycerin, etc., put up in attractive forms for cosmetic or medicinal purposes. Most preparations of this kind are put up under the title "liquid glycerin soap."

I.

Potassa soap, white.....	av.oz. 11
Glycerin.....	fl.oz. 8
Simple syrup.....	fl.oz. 7½
Alcohol.....	fl.oz. 4
Oil of bergamot.....	fl.dr. 1
Oil of sassafras.....	drops 40
Oil of cassia.....	drops 20
Oil of rose geranium.....	drops 20
Oil of wintergreen.....	drops 20
Oil of cloves.....	drops 10
Oil of citronella.....	drops 10
Oil of mirbane or bitter almonds.....	drops 10
Tincture of musk.....	fl.dr. 1

Mix, allow to stand a few days, and filter.

—D.

II.

Potassa soap, white.....	av.oz. 11
Glycerin.....	fl.oz. 16
Alcohol.....	fl.oz. 4

Mix, add the perfumes of the preceding mixture, allow to stand a few days, and filter.

—D.

Shaving Cream.

I. Lard.....	av.oz. 14
Caustic potassa.....	av.oz. 2
Water.....	fl.oz. 6
Perfume.....	to suit

Met the lard in a porcelain vessel over a salt water bath; dissolve the potassa in the water, and run the lye, thus formed, very slowly into the melted grease, stirring thoroughly all the time, until saponification is complete.

A pearly appearance can be given to the "cream," which is simply a soft soap, by long trituration in a mortar with a little alcohol, say 2 fluidrams to each pound of the soap.

Bitter almond oil may be used as a perfume for the "cream." Only a very minute proportion is required. A few drops dissolved in the alcohol used as above will suffice.

Glycerin should be added to this cream to retain it in a permanently soft condition.

II.

Castile soap, white.....	av.oz. 3
Rose water.....	fl.oz. 12
Sweet almond oil.....	fl.oz. 1½
Cacao butter.....	av.oz. 1½
Tincture of benzoin.....	fl.dr. 3
Oil of rose geranium.....	drops 3
Oil of bitter almond.....	drops 3
Glycerin.....	sufficient

Dissolve the soap in the water by the aid of water-bath heat, add the sweet almond oil and cacao butter previously melted together, then, while still warm, incorporate the tincture, oils and sufficient glycerin to give the proper creamy consistence.

Shaving Powder.

I.

Soap, powder.....	av.oz. 10
Orris root, powder.....	gr. 375
Starch.....	gr. 375
Sodium carbonate, pure.....	gr. 128
Oil of bergamot.....	drops 36
Oil of lemon.....	drops 36
Peru balsam.....	drops 18
Tincture of musk.....	drops 18

Mix well, reducing to fine powder.—H.

II.

Soap, powder.....	av.oz. 12
Sodium carbonate.....	av.oz. 1½
Starch.....	av.oz. 2
Orris root, powder.....	gr. 288
Oil of bergamot.....	drops 25

Instead of the orris root the same weight

of powdered quillaja and a very little oil of orris may be used. An addition of glycerin will render the powder milder in use.

Manicure or Finger-Nail Cosmetics.

Different preparations of tin have been used successfully for cleansing and polishing finger nails, probably on account of their detergent and astringent qualities. The use of tin oleate has been highly recommended as imparting a splendid luster to the nails, and when colored with a little carmine, giving to them a fine roseate tint. The oleate is prepared as follows: To a solution of white castile soap in warm water 1 av.ounce to the pint, gradually add a 10 per cent solution of tin chloride until it ceases to produce a precipitate. The insoluble substance formed, after being washed and dried, is tin oleate. It is a soft solid, and is used without further preparation, unless, as stated, it be tinted with carmine. It may be perfumed if desired.

Another substance which is used as a nail powder is pure tin oxide, perfumed with oil of lavender, and tinted with carmine. It is applied either by rubbing it in on to the nail with the finger, or with a nail polisher covered with leather.

Still another polish for finger nails is tin stearate. It is superior to the oleate, being stiffer and thus nicer to use. It may be prepared like the oleate by precipitation, using solutions of sodium or potassium stearate and tin chloride. This may be tinted with carmine if desired. If a cheaper preparation is wanted, it can be mixed with equal parts of zinc oxide.

Another suitable powder is the following:

Pumice stone, very fine powder. av.oz. 2
Talcum, powder. av.oz. ½

Mix well. Add 15 gr. of carmine if desired, as well as some suitable perfume.

Cuttle-fish bone in very fine powder is also employed for polishing the nails.

The following is employed as a varnish or polish after the application of powder:

Paraffin wax. gr. 60
Chloroform. fl.oz. 2
Oil of rose. drops 3

Polish the nails, apply the varnish, then rub with chamois skin.

This preparation is employed as a nail wash:

Oxalic acid. gr. 80
Rose water. fl.oz. 1

Mix and make solution.

Apply to the discolored nails by means of soft leather or flannel with friction.

Citric acid or acetic acid may be substituted for oxalic acid in the above.

The following ointment is employed for softening the nails, curing hang nails, etc.:

Petrolatum. av.oz. 1
Castile soap, white, powder. gr. 60
Oil of bergamot or other flavoring oil. sufficient

White petrolatum should be preferred as it will make a nice appearing preparation.

This should be applied at night and the fingers covered with gloves.

SECTION III—PREPARATIONS FOR THE HAIR, SCALP, AND MUSTACHE.

Shampoo Liquids.

These are applications to the head for cleansing purposes, to remove dirt, dandruff, etc., from the scalp and hair. They should be applied freely and rubbed in thoroughly until considerable lather is formed, which latter should be removed by means of a large quantity of water. The "Sea Foam Liquids," which follow are very similar:

I.

Potassium carbonate. av.oz. 1
Borax. av.oz. 1
Distilled water. fl.oz. 32

Mix and dissolve.

II.

Soft or green soap. av.oz. 1¼
Potassium carbonate. av.oz. 2½
Alcohol. fl.oz. 8
Water. fl.oz. 25

Dissolve the potassium carbonate in the water and add the remaining ingredients.

III.

Potassium carbonate. av.oz. 1
Ammonia water. fl.oz. 1½
Tincture of cantharides. fl.dr. 6
Bay rum. fl.oz. 4
Alcohol. fl.oz. 4
Water. fl.oz. 6

Dissolve the potassium carbonate in the water, and add the remaining ingredients.

IV.

Potassium carbonate.....av.oz.	1
Distilled water.....fl.oz.	32

Mix and dissolve.

V.

White castile soap, in shavings. av.oz.	1
Water.....fl.oz.	24
Potassium carbonate.....gr.	30
Borax.....gr.	120
Cologne water.....fl.oz.	2
Bay rum.....fl.oz.	2

Dissolve the soap in the water by the aid of heat, add the other ingredients, and dissolve.

VI.

Ammonium carbonate.....gr.	120
Potassium carbonate.....av.oz.	$\frac{1}{2}$
Tincture of cantharides.....fl.dr.	4
Water.....fl.oz.	8
Bay rum.....fl.oz.	8

Dissolve the salts in the water and add the other ingredients.

VII.

Potassium carbonate.....av.oz.	1
Ammonium carbonate.....gr.	90
Borax.....av.oz.	1
Spirit of soap.....fl.oz.	$\frac{1}{2}$
Bay rum.....fl.oz.	4
Distilled water.....fl.oz.	32

Mix and dissolve.

VIII.

Borax.....gr.	120
Ammonium carbonate.....gr.	60
Glycerin.....fl.oz.	1
Water.....fl.oz.	12
Rum.....fl.oz.	12
Bay rum.....fl.oz.	8

Mix and dissolve.

IX.

White castile soap.....av.oz.	2
Potassium carbonate.....av.oz.	$\frac{1}{2}$
Water.....fl.oz.	8
Alcohol.....fl.oz.	8
Tincture of quillaja.....fl.oz.	2
Oil of lavender.....drops	20

Dissolve the soap and potassium carbonate in the water and add the other ingredients.

X.

Tincture of quillaja.....fl.oz.	10
Cologne water.....fl.oz.	4
Glycerin.....fl.oz.	3
Fluid extract of pilocarpus.....fl.dr.	4
Quinine sulphate.....gr.	30
Orange flower water, enough to make.....fl.oz.	32

Dissolve the quinine in the cologne and tincture of quillaja with the aid of heat; then add the remaining ingredients and filter if necessary.

This may be put up under the title "tonic shampoo."

Sea Foam Liquida.

The difference between these and the preceding class of preparations is not a well defined one, and in fact, the difference is largely in the matter of application or use, the shampoos being employed in liberal quantities and rubbed in vigorously to produce a copious lather, which will then require a large amount of water for removal. In the case of sea foams, a more or less volatile alkali, ammonia, for example, usually forms the principal ingredient, which foams but slightly, and the hair may be cleansed by rubbing with a wet towel.

I.

Ammonia water.....fl.dr.	4
Glycerin.....fl.oz.	1
Spirit of soap.....fl.oz.	1
Alcohol.....fl.oz.	2
Oil of bergamot.....drops	20
Water, enough to make.....fl.oz.	16

II.

Ammonium carbonate.....gr.	120
Alcohol.....fl.oz.	2
Glycerin.....fl.oz.	1
Rose water.....fl.oz.	15

Mix and dissolve.

III.

Spirit of soap.....fl.oz.	7
Glycerin.....fl.oz.	$2\frac{1}{2}$
Rum.....fl.oz.	2
Spirit of lavender.....fl.oz.	2
Alcohol.....fl.oz.	14
Rose water.....fl.oz.	8
Vanillin.....gr.	$1\frac{1}{2}$
Oil of wintergreen.....drops	2
Sandalwood, powder.....gr.	75

Mix, allow to stand for 2 days, and filter.

—D.

IV.

Ammonia water.....fl.oz.	1
Tincture of cantharides.....fl.dr.	4
Tincture of capsicum.....fl.dr.	4
Alcohol.....fl.oz.	16
Water.....fl.oz.	16
Potassium carbonate.....av.oz.	$\frac{1}{2}$

Mix and dissolve.

V.	
Tincture of arnica	fl.dr. 1
Tincture of cantharides	fl.dr. 2
Ammonia water	fl.dr. 3
Alcohol	fl.oz. 8
Distilled water	fl.oz. 8

VI.	
Glycerin	fl.oz. 1
Ammonia water	fl.oz. 2
Alcohol	fl.oz. 16
Water, enough to make	fl.oz. 32

VII.	
Bay rum	fl.oz. 16
Alcohol	fl.oz. 8
Glycerin	fl.oz. 8
Tincture of cantharides	fl.oz. 1
Ammonium carbonate	gr. 860

Mix and dissolve.

VIII.	
Alcohol	fl.oz. 16
Water	fl.oz. 16
Cologne water	fl.oz. 1
Ammonia water	fl.oz. 1

IX.	
Fluid extract of quillaja	fl.oz. 4
Glycerin	fl.oz. 2
Cologne water	fl.oz. 4
Alcohol	fl.oz. 8
Rose water	fl.oz. 12

X.	
Borax	gr. 280
Coumarin sugar	gr. 8
Honey, clarified	av.oz. 1¼
Tincture of quillaja	fl.dr. 12
Rum	fl.dr. 12
Alcohol	fl.oz. 4
Orange flower water	fl.oz. 3½
Rose water	fl.oz. 21

Dissolve the borax and sugar in the waters, add the remaining ingredients and filter.

This is known by the name honey water.

XI.	
Eggs	3
Rose water	fl.oz. 27
Spirit of soap	fl.oz. 2
Potassium carbonate	gr. 150
Ammonia water	fl.dr. 3
Coumarin sugar	gr. 8
Oil of rose	drops 2
Oil of bergamot	drops 2
Oil of rose geranium	drop 1
Oil of bitter almonds	drop 1

Beat the eggs thoroughly, mix with the rose water, add the other ingredients, and strain.—D.

Shampoo Paste, Cream or Jelly.

Many shampoo preparations are now put up in the form of pastes or jellies. Many of

these are known by the name "egg shampoo," but some of these preparations do not contain any egg, but are merely a perfumed soft soap. Examples of shampoo pastes are given herewith, some containing egg, some being without it.

I.	
Castile soap, white	av.oz. 4
Curd soap, powder	av.oz. 2
Potassium carbonate	av.oz. 1
Honey	av.oz. 1

Perfume to suit.

Make a homogeneous paste by heating with a sufficient quantity of water.

II.	
Ammonia water	fl.dr. 8
Cologne water	fl.dr. 8
Alcohol	fl.oz. 5
Water	fl.oz. 5
Whites of egg	as many as desired

The whites of egg (about two) are thoroughly beaten up previous to being mixed with the water and water of ammonia; the remaining ingredients are added in their order and the whole stirred briskly.

III.	
White castile soap, in shavings	av.oz. 2
Ammonia water	fl.oz. 2
Bay rum, or cologne water	fl.oz. 1
Glycerin	fl.oz. 1
Water	fl.oz. 12

Dissolve the soap in the water, by means of heat; when nearly cold, stir in the other ingredients.

IV.	
Borax	av.oz. 2
Glycerin	fl.oz. 1
Rum	fl.oz. 10
Bay rum	fl.oz. 10
Whites of egg	2

Incorporate the borax in fine powder with the glycerin and add the bay rum and rum gradually and with constant stirring to the mixture. The previously well-beaten white of egg is added lastly, and the whole stirred thoroughly until an even mixture results.

V.	
Castile soap, white	av.oz. 4
Potassium carbonate	av.oz. 1
Water	fl.oz. 6
Glycerin	fl.oz. 2
Oil of lavender flowers	drops 5
Oil of bergamot	drops 10

To the water, add the soap, in shavings,

and the potassium carbonate, and heat on a water bath until thoroughly softened; add the glycerin and oils. If necessary to reduce to proper consistency, more water may be added.

Shampoo Powders.

Examples of powdery mixtures are herewith given, which may be dispensed in small boxes or in envelopes, each package being sufficient for about one shampoo.

I.

Borax, powder.....	av.oz. 1
Sodium carbonate, powder.....	av.oz. 1
Camphor, powder.....	gr. 20
Oil of rosemary.....	drops 10

This is sufficient for one quart of water.

II.

Borax, powder.....	av.oz. 3
Sodium carbonate, dried.....	av.oz. 6
Quillaja, fine powder.....	av.oz. 3

Perfume to suit.

III.

Borax, powder.....	av.oz. 3
Camphor, powder.....	gr. 80
Cochineal, powder.....	gr. 40
Oil of rosemary.....	drops 25

Mix well.

This may be put up in half-ounce packages, each of which is sufficient for one pint of water.

Hair Oils. (Huile Philocome.—Huile Antique.)

Hair oil may be prepared from any of the bland, fixed, non-drying oils such as olive, mustard, rapeseed, peanut, or benne oil, also from liquid petrolatum, and from a mixture of castor oil and alcohol. These mixtures must be rendered pleasantly odorous by the addition of suitable perfume. Frequently hair oil is colored red by the use of alkanet root or of its coloring constituent, alkannin.

Hair oil in its usual yellow condition is frequently dispensed under the name "bear's oil"; if colored red, it is often known as "rose oil."

I.

Castor oil.....	fl.oz. 4
Alcohol.....	fl.oz. 26
Tincture of cantharides.....	fl.oz. 2
Oil of lavender.....	fl.dr. 1
Oil of rosemary.....	fl.dr. 1
Oil of cloves.....	fl.dr. 2
Oil of bergamot.....	fl.dr. 4
Alkanet root, powder.....	gr. 120

Mix the oils in a bottle; put the alkanet root on a filter or pack in a funnel and percolate the alcohol through it; mix this percolate with the oily mixture, and add the cantharides tincture.

II.

Castor oil.....	fl.oz. 8
Alcohol.....	fl.oz. 24
Oil of bergamot.....	fl.dr. 3

Mix well.—H.

III.

Olive or benne oil.....	fl.oz. 32
Burdock root, fresh.....	av.oz. 4
Castor oil.....	fl.oz. 2
Oil of bergamot.....	fl.dr. 2
Oil of rose geranium.....	fl.dr. 1
Alkannin or alkanet root.....	sufficient

Digest the olive or benne oil with the burdock root for about one-half hour at a moderate heat, then decant the clear liquid, add the other oils, and color, if desired, with alkannin. Alkanet may be employed instead of the latter and may then be added to the burdock root during digestion.

This preparation, as well as the following, is known as "Burdock Root Hair Oil."

IV.

Olive oil.....	fl.oz. 27
Benzoinated oil.....	fl.oz. 3
Alkannin.....	gr. 8
Chlorophyll.....	gr. 40
Oil of bergamot.....	drops 30
Oil of lavender flowers.....	drops 8
Oil of rose.....	drops 8

Dissolve the alkannin and chlorophyll in the first two oils by gentle warming and add the other ingredients. If not clear, filter.—D.

V. This preparation and the following two are known as "Macassar Oil."

Peanut or olive oil.....	fl.oz. 32
Alkannin.....	gr. 15
Oil of bergamot.....	drops 45
Oil of lemon.....	drops 15
Coumarin.....	gr. 1

Mix and dissolve.—D.

VI.

Cocoonut oil.....	fl.oz. 4
Castor oil.....	fl.oz. 3
Alcohol.....	fl.oz. 7
Oil of lavender flowers.....	fl.dr. 1
Oil of bergamot.....	drops 30
Oil of rose geranium.....	drops 10

Melt the cocoonut oil, and add it to the castor oil dissolved in the alcohol. Shake

well together and add the volatile oils. On cooling, the mixture acquires a crystalline appearance, characteristic of cocoanut oil.

This preparation is known as "cocoanut oil" hair dressing.

VII.

Castor oil.....	fl.oz. 16
Alcohol.....	fl.oz. 8
Oil of nutmeg, essential.....	drops 30
Oil of rosemary.....	drops 10
Oil of sweet marjoram.....	drops 10
Oil of neroli.....	drops 10
Oil of rose.....	drops 20
Tincture of musk.....	fl.dr. 1
Alkanet.....	sufficient to color

VIII.

Cassia buds, bruised.....	av.oz. 1 1/4
Alkanet, bruised.....	av.oz. 1 1/4
Olive oil.....	fl.oz. 32
Oil of cinnamon.....	fl.dr. 2
Oil of rose.....	drops 10
Oil of bergamot.....	drops 20
Oil of bitter almond.....	drops 5

Mix the olive oil with the cassia buds and alkanet, macerate in a warm place for 3 days, agitating occasionally, filter, and add the other oils.

Perfumes for Hair Oils and Pomades.

The following mixtures may be employed for perfuming oily mixtures which are intended to be used as hair oils:

I.

Oil of lavender flowers.....	fl.oz. 1
Oil of rosemary.....	fl.oz. 1
Oil of cloves.....	fl.dr. 2
Oil of cassia.....	fl.dr. 1

II.

Oil of bergamot.....	fl.oz. 2 1/2
Oil of lemon.....	fl.oz. 1
Oil of cloves.....	fl.dr. 1/2
Oil of orange.....	fl.dr. 1/2
Oil of cinnamon.....	drops 20
Oil of bitter almonds.....	drops 10

III.

Oil of bergamot.....	fl.dr. 7
Oil of rose.....	drops 50
Oil of rose geranium.....	drops 80
Oil of cloves.....	drops 80

IV.

Oil of bergamot.....	fl.dr. 4
Oil of sandalwood.....	drops 80
Oil of orris, liquid.....	drops 80
Oil of cloves.....	drops 80
Oil of rose.....	drops 16

V.

Oil of bergamot.....	fl.dr. 6
Oil of bitter orange.....	drops 30
Oil of neroli, petals.....	drops 80
Oil of petit grain.....	drops 50
Oil of rose geranium.....	drops 30

VI.

Oil of rose geranium.....	fl.dr. 3
Oil of cloves.....	drops 50
Peru balsam.....	drops 50
Heliotropin.....	gr. 15

Dissolve the latter in a little warm olive oil before adding the volatile oils and balsam.

VII.

Heliotropin.....	gr. 8
Coumarin.....	gr. 1
Oil of orris, liquid.....	drop 1
Oil of rose.....	drops 16
Oil of bergamot.....	drops 32

VIII.

Coumarin.....	gr. 1
Oil of lemon.....	drops 16
Oil of bergamot.....	drops 48

IX.

Coumarin.....	gr. 1
Oil of bitter almonds.....	drops 2
Oil of cassia.....	drops 2
Oil of lavender flowers.....	drops 32
Oil of lemon.....	drops 48
Oil of bergamot.....	drops 80

X.

Coumarin.....	gr. 2
Oil of wintergreen.....	drops 2
Oil of cloves.....	drops 4
Oil of cassia.....	drops 4
Oil of lavender flowers.....	drops 16
Oil of lemon.....	drops 48
Oil of bergamot.....	drops 72

XI.

Oil of lemon.....	fl.oz. 1
Oil of bergamot.....	fl.dr. 2 1/2
Oil of cloves.....	fl.dr. 1/2
Oil of orange.....	fl.dr. 1/2
Oil of cinnamon.....	drops 20
Oil of bitter almond.....	drops 10

Hair Pomades or Pomatums.

These preparations are made with various substances such as lard, beef marrow, cacao butter, wax, cocoanut oil, petrolatum, ceresin, lanolin, castor oil, olive, cottonseed oil etc. To obtain a good product the various fatty ingredients must be in perfectly fresh condition.

These fatty bodies should be rendered pleasantly odorous by the addition of perfumes or mixtures of various oils, tinctures,

etc. In some of the formulas given below, the perfume is mentioned; in such as specify no perfume, the scents or perfumes under the preceding title may be employed.

Pomades may be colored red or pink by means of alkanet root or alkannin.

Some formulas for hair pomades mention water as an ingredient. This is employed for cheapening purposes.

In combining the ingredients of pomades, the less fusible fats, like wax or spermaceti, should be melted first, the lard, petrolatum, or fixed oil should then be added, and the whole allowed to become nearly cold before incorporating the perfume.

I. Yellow wax.....av.oz. 4
Cottonseed oil.....fl.oz. 20
Lard.....av.oz. 5

Mix by fusion, stir until cold, incorporating perfume with the mixture during cooling.

II.
Yellow wax.....av.oz. 2
Castor oil.....fl.oz. 6
Sweet almond oil.....fl.oz. 1
Olive oil.....fl.oz. 4
Benzoinated lard.....fl.oz. 3

Melt the wax at a gentle heat, add the oils and lard, stir till all is melted, allow to cool, stirring constantly till hard. While it is cooling any desirable perfume may be incorporated.

III.
Lard.....av.oz. 24
White wax.....av.oz. 2½
Borax.....gr. 150
Distilled water, warm.....fl.oz. 6½

Melt the wax, add the lard, allow to cool, and then stir with a broad spatula or wooden paddle until the mixture has thickened. Now add the borax dissolved in the water, and continue stirring until the fatty mixture becomes brilliantly white and foam-like. This may be perfumed as desired.—D.

IV.
Cacao butter.....av.oz. 4
Lard, benzoinated.....av.oz. 12
Mix by fusion and stir occasionally until cool.—D. modified.

This may be perfumed as desired.

V.
Lanolin.....av.oz. 6
Lard.....av.oz. 8
Benzoinated oil.....fl.oz. 6

Melt the lard and lanolin, add the oil, stir until cool, and add suitable perfume.—D.

VI.

Lard, benzoinated.....av.oz. 18
Beef tallow.....av.oz. 2
Cacao butter.....av.oz. 2
Orange flower water.....fl.dr. 12
Oil of bergamot.....fl.dr. 8
Oil of lemon.....fl.dr. 1
Oil of citronella.....drops 30
Oil of rose geranium.....drops 30
Tincture of musk.....drops 5

Melt lard, tallow, and cacao butter together, incorporate the water, and when nearly cold add the remaining ingredients.—H.

VII.

Expressed oil of nutmeg.....av.oz. ½
Lard.....av.oz. 25
Beef tallow.....av.oz. 1½
Yellow wax.....av.oz. 1½
Cinnamon.....av.oz. ¾
Cloves.....av.oz. ¾
Lemon peel, fresh.....av.oz. 1½
Benzoin.....av.oz. ½
Alkanet root.....av.oz. ½
Oil of bergamot.....fl.dr. 4
Oil of citronella.....fl.dr. 1

Mix the cinnamon, cloves, lemon peel, benzoin, and alkanet, reduce to coarse powder, add to the nutmeg oil, lard, wax, and tallow previously melted together, maintain the whole at a water bath temperature for three hours, strain, allow the fine particles present to subside, decant the clear liquid, and add the volatile oils.—H.

Castor Oil Hair Pomade.

I.
Castor oil.....av.oz. 16
White wax.....av.oz. 4
Oil of bergamot.....fl.dr. 8
Oil of lavender flowers.....drops 30
Benzoic acid.....gr. 10

Melt the wax, add the castor oil, mix well and when nearly cold add the remaining ingredients.

II.
Castor oil.....av.oz. 16
Petrolatum.....av.oz. 4½
Yellow wax.....av.oz. 2½

Melt the wax, add the petrolatum and oil, and when nearly cold add suitable perfume.

III.
Wax, white or yellow.....av.oz. 8
Castor oil.....av.oz. 5
Cottonseed oil.....av.oz. 2
Melt the wax, add the other ingredients, and stir until cool. Suitable perfume may now be added.

IV.

Spermaceti.....	gr. 300
White wax.....	gr. 480
Castor oil.....	f.oz. 16
Oil of rosemary.....	f.dr. 1
Oil of verbena.....	f.dr. 1
Oil of bergamot.....	f.dr. 1
Tincture of curcuma.....	f.dr. 1

Melt the wax and spermaceti, add the castor oil, and stir in the perfume and tincture.

Cocoonut Oil Hair Pomade.

Lard.....	av.oz. 8
Cocoonut oil.....	av.oz. 12
Ceresin, white and odorless.....	av.oz. 8
Borax.....	gr. 150
Distilled water, warm.....	f.oz. 12

Prepare like the preceding.—D.

Crystal Hair Pomades.

Under this heading are grouped hair pomades which are made to assume a crystalline appearance.

I.

Castor oil.....	av.oz. 17
Olive or peanut oil.....	av.oz. 12
Spermaceti.....	av.oz. 4
Oil of ylang ylang.....	f.dr. 5
Oil of rose.....	drops 8
Oil of bergamot.....	drops 8
Oil of neroli.....	drops 5
Oil of rose geranium.....	drops 2
Oil of bitter almond.....	drop 1
Heliotropin.....	gr. 1

Fuse the first three ingredients together and add the perfume before it has congealed.

The pomade appears to best advantage in transparent glass jars and in order that it may appear as coarsely crystalline as possible, allow the congealing to go on as slowly as possible by placing the filled jars in warm water, and allow the mixture to stand undisturbed for 6 hours.—D.

II.

Castor oil.....	av.oz. 16
Spermaceti.....	av.oz. 8
Oil of bergamot.....	f.dr. 8
Oil of verbena.....	f.dr. ½
Oil of lavender flowers.....	f.dr. ½
Oil of rosemary.....	f.dr. ½
Benzoic acid.....	gr. 10

Melt the spermaceti, add the castor oil, then the other oils and acid, and allow the whole to cool very slowly and undisturbed.

Marrow Hair Pomades.

Under this heading are included a number of hair pomatums known by this name and which usually contain beef marrow,

I.

Beef marrow.....	av.oz. 8
Beef suet.....	av.oz. 4
Yellow wax.....	av.cz. 1
Castor oil.....	av.oz. 4
Oil of bergamot.....	f.dr. 2
Oil of lemon.....	f.dr. 1
Oil of orange.....	f.dr. 1

Melt the wax, suet, and marrow, strain, allow to cool somewhat, and add the volatile oils.

II.

Beef marrow.....	av.oz. 4
Lard.....	av.oz. 12

Melt together, strain, and perfume as desired.—D.

III.

Beef marrow.....	av.oz. 19
Peru balsam.....	gr. 270
Oil of cinnamon.....	f.dr. 2½
Oil of bergamot.....	f.dr. 1½
Tincture of cantharides.....	f.dr. 1
Alcohol.....	f.dr. 6

Melt the marrow, add the other ingredients, strain, and stir until solidified.—H.

This has been known as "Dupuytren's pomade."

IV.

The following has also been known as "marrow pomatum:"

Lard.....	av.oz. 16
Suet.....	av.oz. 8
Oil of lemon.....	f.dr. 2
Oil of bergamot.....	f.dr. 1
Oil of cloves.....	drops 40

Mix the lard and suet by fusion, allow to cool, incorporate the oils, and stir until solid.

Bear's Grease.

A number of hair pomades are known by this title. It is almost needless to state that none of the preparations bearing this title are made with any ingredients from the animal which furnishes the name.

I.

Beef marrow.....	av.oz. 8
Lard.....	av.oz. 24
Oil of lemon.....	f.dr. 6
Oil of rose.....	drops 15
Oil of bergamot.....	drops 15
Oil of cinnamon.....	drop 1
Coumarin.....	gr. 1

Mix the marrow and lard by fusion, strain, allow to cool somewhat, add the other ingredients and stir frequently until solid.—D.

- II.
 Beef marrow.....av.oz. 15
 Spermaceti.....av.oz. 1
 Cacao butter.....av.oz. 1
 Mix by fusion and perfume to suit.—H.

- III.
 Lard.....av.oz. 8
 Veal suet.....av.oz. 8
 Olive oil.....fl.oz. 1½
 Compound tincture of benzoin..fl.dr. 4
 Melt the lard and suet, add the olive oil, and thoroughly incorporate the tincture.

Anti-Kink Hair Pomade.

- Beef suet.....av.oz. 16
 Yellow wax.....av.oz. 2
 Castor oil.....av.oz. 2
 Benzoic acid.....gr. 10
 Oil of lemon.....fl.dr. 1
 Oil of cassia.....drops 15
 Mix the suet and wax, add the castor oil and acid, allow to cool somewhat, and incorporate the other oils.

This is used for taking the kinks out of and straightening the hair.

Bandolines.

These are mucilaginous preparations used by ladies for application to the hair before the process of "frizzing." The object in employing them is to cause the hair to remain in curl for a longer period of time.

Usually these preparations are perfumed; if containing oil of rose, they are known as "rose bandoline"; if oil of bitter almonds, "almond bandoline," etc.

- I.
 Gum tragacanth.....gr. 120
 Water.....fl.oz. 12
 Alcohol.....fl.oz. 2
 Oil of rose.....drops 5

Leave the gum tragacanth in the water over night. In winter the mixture should be kept in a warm place. When the gum is thoroughly disintegrated, strain the mucilage with pressure through a cloth and add it to the oil of rose dissolved in the alcohol. Any other essential oil may be substituted for that of rose. The preparation may be tinted pink or red by the addition of solution of carmine.

If a thicker preparation is desired, more tragacanth may be added.

- II.
 Quince seed, bruised.....gr. 180
 Water.....fl.oz. 16

Macerate at a temperature just short of boiling, with frequent agitation, until a thick mucilage is formed; strain and add 2 fluid-ounces of good cologne water in which 30 grains of salicylic acid has been dissolved, or 60 grains of borax may be substituted for the salicylic acid. The borax if used should be dissolved in the mucilage. Instead of cologne as a perfume oil of rose dissolved in alcohol may be used.

- III.
 Irish moss.....av.oz. 4
 Water.....fl.oz. 16
 Boil and strain; when cold add 2 ounces of cologne and preservative agent as in the preceding.

- IV.
 Tragacanth.....av.oz. ½
 Glycerin.....fl.oz. 1
 Rose water.....fl.oz. 12
 Diluted alcohol.....fl.oz. 1½
 Macerate the gum in the glycerin and water until thoroughly softened; strain forcibly through muslin, and add the diluted alcohol containing some perfuming agent in solution.

- V.
 Tragacanth.....gr. 150
 Rose water.....fl.oz. 16
 Fuchsin.....gr. 8
 Oil of rose.....drops 20
 Alcohol.....fl.dr. 12

Macerate the tragacanth in rose water until softened, and strain forcibly through muslin; dissolve the oil and fuchsin in the alcohol and add this to the preceding mixture.—H. modified.

VI. Bandoline in powder is usually powdered tragacanth perfumed, by trituration, with a suitable flavoring volatile oil.

Curlique or Hair Curling Liquid or Oil.

I. For keeping hair in curl:

- Borax powder.....av.oz. 1
 Gum arabic.....gr. 80
 Spirit of camphor.....fl.dr. 6
 Water, warm.....fl.oz. 16

Dissolve solids in warm water, and when cool, add the camphor.

Wet the hair with above and roll on papers as usual, let dry, unroll, and form into ringlets.

II. For curls without papers:

Potassium carbonate.....	gr. 120
Ammonia water.....	fl.dr. 1
Alcohol.....	fl.dr. 12
Rose water, enough to make.....	fl.oz. 16

In using, moisten hair, adjust them loosely, and they will curl upon drying.

III.

Potassium carbonate.....	gr. 100
Water of ammonia.....	fl.dr. 1
Glycerin.....	fl.dr. 3
Alcohol.....	fl.dr. 10
Rose water, enough to make.....	fl.oz. 16

Mix together and dissolve. Moisten the hair; adjust it loosely, when it curls upon drying.

IV.

Gum arabic.....	dr. 1
Sugar.....	dr. 1
Rose water.....	oz. 2

Mix and dissolve. Moisten the hair with the solution at bedtime; roll in twists on paper.

V.

Potassium carbonate.....	gr. 120
Cochineal, powder.....	gr. 30
Water of ammonia.....	fl.dr. 1
Glycerin.....	fl.dr. 2
Alcohol.....	fl.oz. 1½
Distilled water.....	fl.oz. 18
Oil of rose.....	drops 5

Digest with agitation for a week, then decant or filter. The hair is moistened with it and then loosely adjusted. The effect occurs as it dries.

VI.

Resin.....	gr. 16
Alcohol.....	fl.oz. 16

Mix, dissolve and add suitable perfume.

Remedies for Dandruff.

Dandruff requires treatment mainly for the reason that it may be either the precursor or the cause of baldness.

Most of the remedies given below require that the scalp be first cleansed with a shampoo, although some dandruff remedies combine detergent, or cleansing, and curative properties.

The remedies mentioned are to be applied once, or possibly twice, daily.

The various hair tonics, hair oils, and hair pomades, as well as the remedies for baldness, are also useful for the cure of dandruff.

I.

Salicylic acid.....	gr. 25
Glycerin.....	fl.dr. 1
Diluted alcohol.....	fl.oz. 2
Oil of wintergreen.....	drops 3
Oil of rose.....	drop 1
Oil of neroli.....	drop 1
Water.....	fl.oz. 4

Mix the acid and oils with the glycerin and alcohol, add the water and filter.

II.

Pilocarpine hydrochlorate.....	gr. 3
Quinine muriate.....	gr. 60
Sulphur, precipitated.....	gr. 150
Peru balsam.....	gr. 300
Beef marrow.....	av.oz. 3

III.

Salicylic acid.....	gr. 30
Borax, powder.....	gr. 15
Peru balsam.....	gr. 24
Oil of anise.....	drops 5
Oil of bergamot.....	drops 15
Petrolatum.....	av.oz. 3

Mix well, making a smooth ointment.

IV.

Resorcin.....	gr. 240
Castor oil.....	fl.oz. 5
Alcohol.....	fl.oz. 15
Peru balsam.....	gr. 24

Rub in daily with a piece of flannel.

V.

Peru balsam.....	gr. 30
Betanaphthol.....	gr. 60
Lanolin.....	gr. 360
Lard, benzoinated.....	gr. 120

VI.

Resorcin.....	gr. 60
Ether.....	fl.dr. 1
Olive oil.....	fl.dr. 1
Alcohol.....	fl.oz. 6

To be well shaken and applied to the scalp by a bristle brush about twice as large as the ordinary mucilage brush, by insinuating it between the locks of hair. The head to be well washed with soap and warm water twice a week.

VII.

Potassium hydrate.....	gr. 18
Carbolic acid.....	drops 25
Cocoonut oil.....	gr. 240
Lanolin.....	gr. 240

Dissolve the potassium hydrate in a small amount of water and add the other ingredients.

Label: Rub into the scalp twice a day. A cure is usually effected in from one to three months.

VIII.

Borax, powder.....	gr. 60
Sulphur.....	gr. 120
Glycerin.....	fl.dr. 4
Spirit of camphor.....	fl.oz. 1
Soap liniment.....	fl.oz. 2
Water.....	fl.oz. 12

Dissolve the borax in the water; triturate the sulphur with the glycerin, mix the two, and add the remaining ingredients.

Directions: Apply to the scalp two or three times a day.

IX.

Betanaphthol.....	gr. 360
Glycerin.....	fl.oz. 2
Oil of wintergreen.....	drops 30
Oil of rose.....	drops 15
Oil of neroli.....	drops 15
Terpineol.....	drops 15
Oil of orange.....	drops 5
Heliotropin.....	gr. 1½
Tincture of quillaja.....	fl.oz. 30

Wash the hair, dry it, apply the above lightly with a sponge, tie a cloth over the head, and allow it to remain for one-half hour.—D.

X.

Carbolic acid.....	fl.dr. 1
Bay rum.....	fl.oz. 32

XI.

Chloral hydrate.....	gr. 120
Glycerin.....	fl.oz. 1
Bay rum, enough to make.....	fl.oz. 16

XII.

Chloral hydrate.....	gr. 30
Bay rum.....	fl.oz. 2
Glycerin.....	fl.oz. 2
Tincture of cantharides.....	fl.dr. 1
Rose water.....	fl.oz. 8

Remedies for Baldness and Falling Out of Hair.

While the formulas given below are intended for alopecia or baldness and loss of hair, it should also be understood that the formulas immediately preceding ("Remedies for Dandruff"), and those that follow this heading, may usually also be employed to strengthen or tone the hair follicles and thus cure or prevent alopecia.

I. Baldness is frequently an infectious disease, caused by the promiscuous use of combs and brushes, more especially in tonsorial establishments. Cure is possible when treatment is commenced reasonably early, and

carried out with systematic energy. The scalp should be, daily for 6 to 8 weeks, later on less frequently, thoroughly rubbed for 10 minutes with a lather of good tar soap, then washed with lukewarm water, and finally with cold water, and partially dried; then with a mixture of:

Mercuric chloride.....	gr. 7
Water.....	fl.oz. 5
Cologne water.....	fl.oz. 2
Glycerin.....	fl.oz. 2

The scalp should then be rubbed with alcohol containing ½ per cent of betanaphthol; completely dried, and then thoroughly saturated with a mixture of purified lard or lard oil having 2 per cent of salicylic acid and 8 per cent of tincture of benzoin. After a short time the hair will begin to appear, and will, in most cases, soon resume its former vigor and growth. Mercuric chloride (corrosive sublimate) appears to promote the growth of the hair, as has been observed where it has been used as an antiseptic dressing.

With reference to the use of pomade on the hair, it is recommended that all pomade be carefully removed by a washing before it becomes rancid, but that the scalp be not washed without applying pomade afterward. For pomade, animal is preferable to vegetable or mineral fats; the following is recommended:

II.

Pilocarpine hydrochlorate.....	gr. 1
Petrolatum.....	gr. 100
Lanolin.....	gr. 400
Oil of lavender flowers.....	drops 8

III.

Carbolic acid.....	drops 30
Tincture of nux vomica.....	fl.dr. 2
Tincture of cantharides.....	fl.dr. ½
Tincture of cinchona compound.....	fl.dr. 8
Cocanut oil, enough to make.....	fl.oz. 4

To be rubbed in the scalp with a small sponge twice daily.

IV.

Cantharidin.....	gr. 1
Acetic ether.....	fl.dr. 2
Alcohol.....	fl.oz. 3
Castor oil.....	fl.oz. 1
Oil of lavender flowers.....	drops 15

The preparation is to be applied with a small sponge every third day. After apply-

ing a few times the head should be washed, as an accumulation of the liniment may cause too much irritation.

This preparation is known as linimentum crinole.

V.

Oleate mercury	av.oz.	1/2
Oil of almond, sweet	fl.oz.	2 1/2
Oil of rose	drops	2
Oil of bergamot	drops	2

VI.

Tincture of cantharides	fl.dr.	2
Acetic acid	fl.dr.	2
Bay rum	fl.oz.	4
Infusion of tea (1:10), enough to make	fl.oz.	32

Apply once every one or two days.

Hair Tonics.

The preparations known by the general title of hair tonics are intended as tonic to hair and scalp to prevent and cure dandruff, baldness, dryness of the hair, etc.

Some of these preparations contain cinchona or quinine; some contain sulphur and lead salts; others contain fixed oils like benne or coconut oil, and others contain still other ingredients.

They are known by such titles as "hair restorer," "hair restorative," "hair invigorator," "hair vigor," "hair promoter," "hair grower," "hair lotion," "hair renewer," "hair wash," "hair renovator," "hair balsam," etc.

Quinine and Cinchona Hair Tonics.

These preparations are usually dispensed under the titles "quinine hair wash," "quinine hair tonic," and "eau de quinine."

They may be colored red, if desired, by means of red saunders.

I.

Quinine sulphate	gr.	20
Bay rum	fl.dr.	4
Glycerin	fl.dr.	4
Tincture of cantharides	fl.dr.	2
Tincture of capsicum	fl.dr.	2
Water, enough to make	fl.oz.	16

Mix and dissolve.

II.

Quinine sulphate	gr.	20
Glycerin	fl.oz.	1
Cologne water	fl.oz.	2
Bay rum	fl.oz.	2
Rose water	fl.oz.	11

Rub the quinine with the glycerin and add the other ingredients in order named. The addition of fluid extract of jaborandi is recommended to stimulate the growth.

III.

Quinine sulphate	gr.	30
Acetic acid	fl.dr.	2
Resorcin	gr.	120
Water	fl.oz.	4
Oil of eucalyptus	fl.dr.	2
Tincture of cantharides	fl.dr.	3
Alcohol	fl.oz.	12

Mix all, dissolve by agitation, and filter.

IV.

Quinine sulphate	gr.	20
Tincture of cantharides	fl.dr.	2
Fluid extract of jaborandi	fl.dr.	2
Alcohol	fl.oz.	2
Glycerin	fl.oz.	2
Bay rum	fl.oz.	6
Rose water, enough to make	fl.oz.	16

The quinine should be dissolved in the alcoholic liquids by warming slightly, then the other ingredients added, and the whole filtered.

V.

Tincture of red cinchona	fl.oz.	1
Tincture of cantharides	fl.dr.	2
Glycerin	fl.oz.	2
Compound spirit of lavender	fl.dr.	2
Alcohol, enough to make	fl.oz.	16

VI.

Quinine sulphate	gr.	90
Diluted sulphuric acid	m.	15
Alcohol	fl.oz.	2
Glycerin	fl.oz.	1/2
Rose water	fl.oz.	14

Triturate the quinine with the acid, gradually adding the water until solution is effected; then add the remaining ingredients and filter.

VII.

Orris root	av.oz.	4
Cloves	gr.	10
Nutmeg	gr.	5
Red saunders	gr.	20
Quinine sulphate	gr.	40
Cologne water	fl.oz.	1
Glycerin	fl.oz.	1 1/2
Oil of lavender flowers	drops	4
Oil of rose geranium	drops	8
Oil of neroli	drops	4
Water,		
Alcohol	of each,	sufficient

Mix the orris, cloves, nutmeg and saunders, reduce to moderately fine powder, and

*Resorcin
Sulphur precip as 318
Bd-nx
Oil Sweet Almonds as 311
Alcohol of Lead as 311*

percolate with a mixture of one volume of water and three of alcohol, so as to obtain 20 fluidounces of percolate. To the latter add the remaining ingredients and dissolve by agitation.

VIII.

Fluid extract of pale cinchona...fl.dr. 1
Tincture of cantharides.....fl.dr. 2
Glycerin.....fl.oz. 1
Bay rum.....fl.dr. 4
Rose water, enough to make....fl.oz. 20

IX.

Chloral hydrate.....gr. 240
Tincture of cantharides.....fl.dr. 2
Tincture of cinchona.....fl.dr. 4
Glycerin.....fl.oz. 1
Orange flower water,
Rose water of each, equal parts,
to make.....fl.oz. 16

Brush into the roots of the hair every morning, and rub in a little lanolin at night.

X.

Tincture of rhatany.....fl.dr. 1
Tincture of cantharides.....fl.dr. 4
Spirit of lavender.....fl.dr. 2
Glycerin.....fl.oz. 2
Quinine sulphate.....gr. 15
Alcohol, enough to make.....fl.oz. 16

Mix, dissolve and filter.

XI.

Carbolic acid.....fl.dr. 1½
Tincture of nux vomica.....fl.oz. 1
Tincture of cinchona.....fl.oz. 3½
Tincture of cantharides.....fl.dr. 2
Cologne water.....fl.oz. 7
Castor oil.....fl.oz. 4

Shake well before using.

XII.

Alcohol.....fl.oz. 9
Spirit of soap.....fl.oz. 3½
Tincture of cinchona.....fl.oz. 2
Tincture of cantharides.....fl.dr. 1
Peru balsam.....fl.dr. 5
Oil of bergamot.....fl.dr. 2
Oil of orange.....fl.dr. 2
Oil of rose geranium.....fl.dr. 1

Mix and filter.

XIII.

Quinine sulphate.....gr. 15
Cologne water.....fl.dr. 3
Rum.....fl.oz. 3½
Alcohol.....fl.oz. 4
Glycerin.....fl.oz. 8
Rose water.....fl.oz. 21
Alkannin.....sufficient to color

Mix, dissolve and filter.—D.

Lead and Sulphur Hair Promoters.

Hair preparations containing sulphur and lead salt not only act as alleged curatives, but also act as dyes or coloring agents, deepening the color of the hair. The sulphur and lead combine upon exposure to light to form black lead sulphide. For this reason such preparations should be kept darkened by means of an adherent wrapper. The public should be told lead preparations are not harmless.

I.

Lead acetate.....av.oz. ¾
Sulphur, precipitated.....av.oz. 1
Tincture of cantharides.....fl.dr. 4
Glycerin.....fl.oz. 8
Alcohol.....fl.oz. 4
Oil of citronella.....fl.dr. 1
Oil of bergamot.....drops 30
Water, enough to make.....fl.oz. 64

Dissolve the oils in the alcohol, add the glycerin and tincture of cantharides, and mix with the water, then add the sulphur and the acetate of lead.

II. Here is a formula which makes a preparation without sediment. It should be kept from the light.

Lead acetate.....av.oz. ¾
Sodium hyposulphite.....av.oz. 2½
Glycerin.....fl.oz. 8
Alcohol.....fl.oz. 4
Oil of lemon.....fl.dr. 1
Oil of bitter almonds.....drops 15
Oil of cloves.....drops 15
Rose water.....fl.oz. 16
Water, enough to make.....fl.oz. 64

Dissolve the lead acetate and sodium hyposulphite, each separately in two pints of hot water, and mix the solutions. Dissolve the oils in the alcohol, adding 16 fluidounces of water, and rub with 120 grains of magnesium carbonate in a mortar; filter and add the filtrate to the other mixture, now incorporate the glycerin, and the remainder of the water.

III.

Sulphur, precipitated.....av.oz. 1
Lead acetate.....av.oz. 1
Tincture of cantharides.....fl.dr. 4
Glycerin.....fl.oz. 2
Water, enough to make.....fl.oz. 32

Dissolve the lead salt in a portion of the water, and add the remaining ingredients.

This preparation is known as Gen. Twigg's Hair Restorer.

IV.

Precipitated sulphur	gr. 60
Lead acetate	gr. 60
Bay rum	fl.oz. 4
Jamaica rum	fl.oz. 2
Sodium chloride	gr. 60
Rose water	fl.oz. 4
Glycerin	fl.oz. 2

V.

Sulphur, precipitated	av.oz. 1
Lead acetate	av.oz. 1
Glycerin	fl.oz. 6
Rose water, enough to make	fl.oz. 32

VI.

Precipitated sulphur	av.oz. 1
Lead nitrate	av.oz. $\frac{3}{4}$
Tincture of cantharides	fl.oz. 1
Glycerin	fl.oz. 8
Alcohol	fl.oz. 4
Oil of lavender flowers	fl.dr. 2
Oil of bitter almonds	drops 15
Water, enough to make	fl.oz. 64

Dissolve the lead salt in the water and the oils in the alcohol, mix and add the remaining ingredients. Lead nitrate has the advantage over the acetate of being odorless.

Hair Tonics Containing Oil.

I.

Castor oil	fl.oz. 16
Alcohol	fl.oz. 24
Tincture of cantharides	fl.dr. 5
Oil of bergamot	fl.oz. 1
Oil of rose	drops 10
Red saunders	enough to color

Mix, macerate for several days, agitating occasionally and strain.

II.

Carbolic acid	fl.dr. 2
Tincture of cantharides	fl.dr. 2
Tincture of nux vomica	fl.oz. 1
Compound tincture of cinchona	fl.oz. 4
Cologne water	fl.oz. 4
Cocoonut oil, enough to make	fl.oz. 16

III.

Castor oil	fl.oz. 16
Tincture of cantharides	fl.oz. 2
Tannin	gr. 120
Oil of bergamot	fl.dr. 2
Oil of cloves	fl.dr. 2
Oil of lavender	fl.dr. $\frac{1}{2}$
Oil of rosemary	fl.dr. $\frac{1}{2}$
Alcohol	fl.oz. 48

IV.

Castor oil	fl.oz. $5\frac{1}{2}$
Tincture of cantharides	fl.dr. 6
Oil of bergamot	fl.dr. 2
Stronger water of ammonia	drops 6
Alcohol, enough to make	fl.oz. 16

V.

Tincture of cantharides	fl.dr. 4
Tincture of capsicum	fl.oz. 1
Cocoonut oil	fl.oz. 4
Castor oil	fl.oz. 4
Oil of nutmeg, essential	fl.dr. 1
Cologne water, enough to make	fl.oz. 16

Shake well before using, and apply once or twice daily.

VI.

Sweet almond oil	fl.oz. 2
Ammonia water, concentrated	fl.oz. 2
Chloroform	m. 50
Oil of rosemary	fl.dr. $1\frac{1}{2}$
Oil of lemon	drops 12
Alcohol, enough to make	fl.oz. 16

This preparation is well known under the name Erasmus Wilson's Hair Lotion.

VII.

Castor oil	fl.oz. 2
Oleo-balsamic mixture	fl.oz. 3
Tincture of cantharides	fl.dr. 3
Benzoic acid	gr. 120
Tannic acid	gr. 90
Alcohol	fl.oz. 8

Mix and filter.

Miscellaneous Hair Tonics.

I.

Oleo-balsamic mixture	fl.oz. 4
Glycerin	fl.oz. 5
Rose water	fl.oz. 20
Tincture of cantharides	fl.dr. 4
Ammonium carbonate	av.oz. 1

Mix, shake thoroughly, let stand for one hour, and filter.

II.

Tincture of cantharides	fl.dr. 3
Tincture of capsicum	fl.dr. 1
Ammonia water	fl.dr. 2
Glycerin	fl.oz. 1
Cologne water, enough to make	fl.oz. 16

III.

Tincture of cantharides	fl.dr. 4
Glycerin	fl.oz. 4
Bay rum	fl.oz. $11\frac{1}{2}$

IV. Salicylic Hair Tonic:

Salicylic acid	gr. 50
Borax	gr. 150
Tincture of cantharides	fl.oz. 1
Bay rum	fl.oz. 6
Rose water	fl.oz. 4
Water, enough to make	fl.oz. 16

Mix the salicylic acid and borax with 4 fluidounces of water; when reaction ceases, add the remaining ingredients, and filter.

V. 'Pilocarpine Hair Wash.'

Pilocarpine nitrate or muriate.....gr.	4
Tincture of cantharides.....f.dr.	4
Cologne water.....f.oz.	4
Soap liniment, enough to make.....f.oz.	16

Apply to the scalp once daily.

See also next formula.

VI.

Pilocarpine muriate.....gr.	4
Oil of rosemary.....f.dr.	1
Oil of bergamot.....f.dr.	1½
Oil of lavender flowers.....f.dr.	1½
Stronger water of ammonia.....f.dr.	3
Tincture of cantharides.....f.dr.	3
Castor oil.....f.oz.	2
Alcohol, enough to make.....f.oz.	20

The pilocarpine and oils should be dissolved in some of the alcohol, then the tincture and the ammonia added, and enough alcohol to make up the required volume.

The scalp should be thoroughly cleansed by washing with warm soap and water containing a little borax, and dried; the tonic is then to be applied with a small sponge.

VII.

Benne oil.....f.oz.	16
Lime water.....f.oz.	24
Oil of bergamot.....f.oz.	2
Oil of lemon.....f.dr.	1
Oil of lavender flowers.....f.dr.	1½
Oil of cloves.....drops	15

Mix the benne oil and water thoroughly and add the remaining ingredients.

This hair preparation is known by the misapplied appellation of "Lime Juice and Glycerin."

Hair Dyes.

These preparations are generally made by the use of silver, lead and bismuth salts, the first mentioned being usually the most effective and most expeditious. Some of these preparations require the use of a second or mordanting agent, others are made without the use of the latter. In the case of the two-bottle preparations, the two vials are put up together in a neat pasteboard box.

The usual color desired is black, although brown is also largely in demand. The dyes that produce a black color will produce a brown by appropriate weakening or dilution.

Before using any dye, the hair should be freed from grease by washing with an alkaline carbonate or soap, removing the latter

by the abundant use of water, subsequently drying thoroughly.

The dye should be distributed among the hair by means of a tooth brush and occasional combing with a new comb: contact with the scalp should be avoided.

I.—A.

Pyrogallic acid.....dr.	1
Alcohol.....f.dr.	4
Water, distilled.....f.oz.	4

B.

Silver nitrate.....dr.	1
Water, distilled.....f.dr.	4
Ammonia water.....	enough

After dissolving the silver nitrate in the water, gradually add water of ammonia, stirring constantly, until the brown turbidity produced has vanished and the liquid appears colorless. Then add

Water, distilled, enough to make.....f.oz. 1

A large excess of ammonia tends to produce a brownish dye. Various shades of brown may be produced by increasing the amount of water in the silver solution. It should be remembered that the hair must, previous to treatment, be washed with warm water containing sodium carbonate, well rinsed with clear water, and dried.

II.

Silver nitrate.....gr.	120
Copper nitrate.....gr.	12

Dissolve the two salts in 2 fluidounces of water and add ammonia water, constantly stirring, until the precipitate at first formed is dissolved and the liquid becomes clear and transparent. Make another solution of

Pyrogallic acid.....gr.	40
Acetic acid.....f.dr.	2
Alcohol.....f.dr.	12

Apply the pyrogallic solution to the hair with a stiff brush (a tooth brush will answer), taking care not to wet the scalp. When partially dry, apply the silver solution in the same manner, using another brush. For a brown dye, decrease the amount of pyrogallic acid; as little as one-half grain to the fluid-ounce is sometimes used. Sometimes the acetic acid is omitted, and in most of the commercial hair dyes diluted alcohol is used as a solvent of the acid. Copper sulphate might possibly be substituted for the nitrate.

The use of the copper salt is to avoid the dull reddish tint imparted to hair by the use of silver nitrate alone.

III. Make two solutions as follows:

Bismuth subnitrategr. 200
Water.....fl.oz. 2
Nitric acid.gr. 420 or sufficient to dissolve

Use heat to effect solution also.

Tartaric acid.....gr. 150
Sodium bicarbonate.....gr. 168
Water.....fl.oz. 32

When effervescence of the latter has ceased, mix the cold liquids by pouring the latter into the former with constant stirring. Allow the precipitate to subside, transfer it to a filter or a strainer, and wash with water until free from the sodium nitrate formed, as this salt would be an unnecessary impediment to the operation of the dye. Now allow the magma to drain until its weight is reduced to at least $4\frac{1}{2}$ av. ounces. This can be readily determined without removing it from the filter and funnel, if both have been previously weighed. Transfer the magma, which consists of bismuth tartrate, to a dish, and dissolve it by the addition of sufficient stronger water of ammonia.

Next dissolve 100 grains of sodium hyposulphite in 8 fluidounces of water, and mix the two liquids. The total volume of the product should be about 7 or 8 fluidounces, which would make the solution contain about 10 per cent of bismuth tartrate, the product from above quantities being nearly 800 grains. The addition of 1 fluidounce of glycerin is calculated to make it more effective in coloring the hair, as this ingredient prevents entire drying up of the constituents, and thus favors a continuation of the decomposition.

Should it be desired to produce a jet black, this may be accomplished (after the dye given above has first been applied and allowed to dry) by the application of a solution of an alkaline sulphide or sulphuret. It is not necessary that the latter salt should be absolutely pure, as the commercial sulphuret of potassium answers well if fresh or undecomposed. The application of these dyes and mordants is usually made by means of a toothbrush and comb, so as to avoid staining the scalp.

IV.

Silver nitrate.....av.oz. 1
Ammonia water.....fl.oz. 2
Sodium carbonate, pure:.....gr. 180
Distilled water.....sufficient

Dissolve the silver salt in 8 fluidounces of water and ammonia water until the precipitate first formed is redissolved; dissolve the sodium salt in this solution, add enough water to make 12 fluidounces, and after standing a few days, decant the clear liquid.

As a mordant use:

Pyrogalllic acid.....gr. 144
Alcohol.....fl.oz. 4
Water.....fl.oz. 8

Mix and dissolve.

This is used as a brown dye.

V.

Silver nitrate.....gr. 480
Copper nitrate.....gr. 90
Distilled water.....fl.oz. 8
Ammonia water.....sufficient

Dissolve the two salts in the distilled water and add the ammonia water until the liquid becomes a clear fluid.

In using, apply to the hair carefully with a tooth brush, after thoroughly cleansing the hair, and expose the latter to the rays of the sun.

VI.

Silver, metallic.....gr. 150
Iron, filings or reduced.....gr. 300
Nitric acid.....fl.dr. 10
Water.....sufficient

Mix the first three, allow to stand until dissolved or nearly so, dilute with water to 4 fluidounces and filter.

Apply by means of a tooth brush to the hair previously cleaned with soap and water and dried.

VII.

Litharge.....av.oz. 1
Lime, freshly slaked.....av.oz. 2
Starch.....av.oz. 2

Mix all in fine powder and perfectly dry, and keep in well-stoppered bottles.

This powder is to be made into a thin paste or cream with water for use as a black dye or a thin milk for a brown dye. Before using, the hair should be freed from grease by means of soap and water, subsequently drying. Now apply the liquid by means of a sponge, brush or the fingers, observing to rub it well

into the roots of the hairs, and to pass a comb occasionally through the latter to insure uniform distribution and contact with every part. The hair should be kept in a moistened state during 3 or 4 hours, which can be effected by wrapping about the head a moist cloth or wearing a cap of oiled silk. When the coloring has been effected, remove the powder by washing it out with warm soap and water.

The danger in using this preparation is the possibility of lead poisoning.

VIII. The following is known as "walnut hair oil or dye:"

Green walnut shells.....	av.oz. 2
Alum.....	av.oz. $\frac{1}{4}$
Olive oil.....	fl.oz. 4

Heat together in a water bath until the water has been completely expelled; then express, filter and perfume.

Brilliantines.

These are preparations intended for application to the mustache and consist of mixture of alcohol, fixed oils and glycerin, with some perfuming agent. They are of two varieties, separable and non-separable, the former separating on standing into two layers. The cause of the separation is the presence of fixed oils other than castor and alcohol, and possibly glycerin or water. The non-separating kind consists of castor oil in alcoholic solution. If a colored preparation is desired, it may be tinted with saffron tincture, alkanet root, or alkannin.

I.	Castor oil.....	fl.dr. 4
	Sweet almond oil.....	fl.oz. $3\frac{1}{2}$
	Glycerin.....	fl.dr. $1\frac{1}{2}$
	Jockey club extract.....	fl.dr. 3
	Alcohol, enough to make.....	fl.oz. 8

II.	Sweet almond oil.....	fl.oz. 8
	Alcohol.....	fl.oz. 4
	Glycerin.....	fl.oz. 1
	Oil of rose geranium.....	drops 12

III.	Honey.....	fl.oz. 4
	Glycerin.....	fl.oz. 2
	Cologne water.....	fl.oz. 2
	Alcohol.....	fl.oz. 8

IV.	Castor oil.....	fl.oz. 4
	Alcohol.....	fl.oz. 8
	Oil of rose.....	drops 16
	Oil of neroli.....	drops 16
	Mix, and color with tincture of saffron.	

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V.	Castor oil.....	fl.oz. 6
	Alcohol.....	fl.oz. 8
	Water.....	fl.oz. 4
	Oil of neroli.....	drops 10
	Oil of verbena.....	drops 10
	Oil of rose geranium.....	drops 15
	Oil of lemon.....	drops 18
	Mix and color with tincture of saffron.	

VI.	Castor oil.....	fl.oz. 3
	Glycerin.....	fl.oz. 1
	Alcohol.....	fl.oz. 10

Perfume to suit.

VII.	Glycerin.....	fl.dr. 2
	Castor oil.....	fl.oz. 1
	Alcohol.....	fl.oz. 15

Mix and perfume.

VIII.	Glycerin.....	fl.dr. 2
	Oleic acid.....	fl.oz. 1
	Alcohol.....	fl.oz. 15

Mix and perfume.

IX.	Glycerin.....	fl.oz. 2
	Sweet almond oil.....	fl.oz. 8
	Alcohol.....	fl.oz. 8

Mix and perfume.

X.	Veal or beef suet.....	av.oz. 4
	Spermaceti.....	av.oz. 2
	Castor oil.....	av.oz. 12
	Oil of bitter almonds.....	drop 1
	Oil of cloves.....	drops 10
	Oil of bergamot.....	drops 20

Melt the suet and spermaceti, add the castor oil, and incorporate the flavoring oils, allowing to cool somewhat before adding the latter.

This preparation is more of the nature of a pomatum.

Stick Mustache Pomades. (Stick Pomatum.—Cosmetique.)

I.	White wax.....	av.oz. 8
	Lard.....	av.oz. 8
	Oil of bergamot.....	fl.dr. 4

Melt the wax and lard together with a gentle heat, stir well as the mixture begins to cool, add the oil just before it is ready to set, and then pour into molds.

Hard pomade is usually cast in little bars or rolls varying in size according to fancy.

These bars or rolls are wrapped in well sized paper, and then enveloped in tin foil.

The molds should be of heavy metal, fashioned after the style of bullet molds. They should be chilled by immersion in very cold water just before casting; this will greatly lessen the chances of the pomade adhering to the molds. When only small quantities are made so that it is desirable to avoid the expense of the regular apparatus, paper molds may be substituted. They can be easily made by folding stout manilla or similar paper over a suitable model and securing it with a little mucilage at the edges. One end is turned in; the molds are then secured in an upright position and filled from the end remaining open. When cast in this way, the mold itself usually answers as the inner wrapper.

Stick pomade made as above is, as will be noticed from the recipe, white. It is frequently required to be brown or black. For the former it is colored by the admixture of a sufficient quantity of burnt umber. The umber must first be rubbed to perfect smoothness on a slab or tile with a little of the melted pomade. When black is desired, lampblack is substituted for the umber.

The perfume is, of course, varied at will. When strong smelling oils are used, yellow wax will usually answer as a substitute for the white when the pomade is to be colored. An article much superior in point of perfume to the foregoing may be made by the substitution of flower-scented pomades for the lard.

II.

White wax.....av.oz. 6
Suet.....av.oz. 8

Melt, mix thoroughly, add suitable perfume, and pour into molds. Color as described in No. I.

III.

White wax.....av.oz. 4
Beef tallow.....av.oz. 8
Oil of bergamot.....fl.dr. 4
Oil of cassia.....drops 40
Oil of thyme (white).....drops 20

A yellow color is produced by tincture of saffron or tincture of turmeric, a brown color by burnt umber in oil, and a black color by animal charcoal ground or triturated in oil.

IV.

White wax.....av.oz. 8
Suet.....av.oz. 8
Tuberose pomade.....av.oz. 4
Jasmine pomade.....av.oz. 4
Oil of roses.....drops 10

First melt the wax, then add the suet, afterward the pomade. When beginning to cool, incorporate the oil of roses and cast into molds.

V. For other mustache pomades, see the next heading.

Hungarian Mustache Pomade. (Hungarian Mustache Wax.—Pomade Hongroise.)

This is a mixture of gum, soap, wax or spermaceti, and water, with perfume and coloring matter. It is in the form of a sticky or tenacious paste which, when applied to the ends of the mustache, retains the latter in extended fashion.

Owing to the fact that it will become hard and dry when exposed to the atmosphere, it must be preserved and dispensed in well-stoppered wide-mouth bottles.

I.

Wax.....av.oz. 4½
White castile soap.....av.oz. 2¼
Oil of bergamot.....fl.oz. ½
Gum arabic, powder.....av.oz. 2¼
Water.....fl.oz. 4

Dissolve the gum in the water; melt the wax and soap together on a water bath, stir in the solution of gum, and lastly, just before cooling, add the bergamot oil. Color, as required, with burnt umber or lampblack rubbed to perfect smoothness on a slab with a little of the melted wax.

II.

Spermaceti.....av.oz. 1
Wax.....av.oz. 4
Gum arabic, powder.....av.oz. 8
White castile soap.....av.oz. 2
Glycerin.....av.oz. 1
Water.....fl.oz. 10

The soap should be finely shaved, and it and the gum stirred up with 4 fluidounces of water to a homogeneous paste. The spermaceti and wax should then be heated with the remainder of the water on a water bath, and stirred carefully into the gum and soap paste. Lastly, the glycerin should be added drop by drop. Perfumery may be added to

suit the taste; if a brown color is desired, umber should be mixed with the glycerin, and for black, lampblack.

III.

Gum arabic, powder.....	av.oz.	4
White castile soap, powder.....	av.oz.	4
White wax.....	av.oz.	4
Rose water.....	fl.oz.	4
Oil of bergamot.....	m.	80
Oil of sandalwood.....	m.	40

Triturate the gum with the water to a smooth paste; melt the wax, add the soap, stir in the gummy mixture before cooling, add the oils and color, if desired, as in the preceding formulas.

IV.

White castile soap, powder.....	av.oz.	2
White wax.....	av.oz.	5
Mucilage of acacia.....	fl.oz.	6
Distilled water.....	fl.oz.	5
Glycerin.....	fl.oz.	1 1/2
Oil of bergamot.....	drops	12
Oil of lemon.....	drops	6
Oil of rose.....	drops	6

Triturate the soap with the mucilage previously mixed with the water to a smooth mixture. To this add the wax and glycerin, heat the whole on a water bath, stirring constantly, until the wax is melted, and the mixture is homogeneous. Now, incorporate the volatile oils, also coloring matter, if a colored pomade is desired. For blond pomade, use yellow ochre; brown, burnt umber; and black, lampblack, each previously triturated to a smooth paste with the glycerin.—D.

SECTION IV—MOUTH PREPARATIONS.

Tooth Preparations. (Dentifrices.)

Tooth Powders.—These preparations must be reduced to fine powder by trituration and sifting, and the ingredients must also be mixed intimately. The customary ingredients are chalk, orris root, myrrh, cuttlefish bone, soap, pumice, etc.

The name given varies according to composition and according to the fancy of the maker. It may be called "myrrh tooth powder," "saponaceous tooth powder," "camphorated tooth powder," "charcoal tooth powder," "thymol tooth powder," "salicylated tooth powder," "quinine tooth

powder," "coral tooth powder," "pearl tooth powder," "rose tooth powder," "antiseptic tooth powder," "salol tooth powder," "violet tooth powder," "aromatic tooth powder," "imperial tooth powder," "crown tooth powder," etc. In each case, the word "dentifrice" may be substituted for "tooth powder."

Tooth powders are usually flavored, the oils of peppermint and wintergreen being the most popular flavors.

Frequently they are also colored with carmine. This must be triturated to a smooth and intimate powder with a portion of the mixture before adding the remaining ingredients.

Tooth Creams and Pastes.—These preparations differ in consistence, the former being rather thin, the latter being a rather hard mass. The former are dispensed in collapsible, the latter in white or opal, jars. Both creams and pastes may be produced from tooth powders by the addition of sufficient glycerin, honey or simple syrup, the first mentioned being preferred on account of its antiseptic property which prevents the preparation from spoiling. The creams are usually made by the use of glycerin, these requiring more of the diluting agent than the pastes. Creams also differ from pastes in almost invariably containing soap, which is usually incorporated in the powdered condition.

Coloring matters and perfumes are added to tooth creams and pastes in the same manner as to tooth powders.

Suitable names for tooth pastes and creams are the following: "Menthol glycerin tooth cream (or paste)," "Castilian tooth cream (or paste)," "Persian tooth cream (or paste)," "cherry tooth cream (or paste)," "creta cream (or paste)," "Oriental tooth cream (or paste)," "saponaceous tooth cream (or paste)," "damask rose tooth cream (or paste)," "eucalyptus tooth cream (or paste)," "coca tooth cream (or paste)," "coral tooth cream (or paste)," "salicylated tooth cream (or paste)," "odontine," "rose tooth cream (or paste)," "kalodont," "salol tooth cream (or paste)," "thymol tooth cream (or paste)," "violet tooth cream (or paste)," "dentine," "dentalba," "dental

cream (or paste)," "antiseptic tooth cream (or paste)," "carbulated tooth cream (or paste)," "camphorated tooth cream (or paste)," "charcoal tooth paste," "ruby tooth cream (or paste)," "myrrhine tooth cream (or paste)," "Vienna tooth cream (or paste)," etc. The word "dentifrice" may in each instance be substituted, if desired, for the word "tooth" or for the phrase "tooth cream" or "tooth paste."

Tooth Washes or Liquid Dentifrices.—These are preparations made from quillaja or soap, and are colored and flavored. They replace the tooth powders, pastes, creams and soaps.

They may be known by such titles as "eudonto," "dentine," "quillaja tooth wash," "kalliodont," "odontine," "saponaceous tooth wash," "aromatic dentifrice," "dentoline," "antiseptic liquid dentifrice," "almond tooth cream," "Oriental tooth wash," "carbulated tooth wash," etc.

See also under heading "Mouth Washes."

Tooth Soaps.—These differ from tooth pastes in being of still firmer consistence and in always containing soap. The other ingredients are practically the same as are employed in the production of the pastes.

Tooth Powder.

I.

Prepared chalk.....av.oz. 32
Tincture of vanilla.....fl.dr. 1¼
Oil of peppermint.....fl.dr. 1¼
Oil of rose geranium.....drops 10

Color pink with carmine if desired.

II.

Precipitated chalk.....av.oz. 15
Sugar.....av.oz. 5
Borax.....av.oz. 5
Orris root.....av.oz. 5
Cardamom.....gr. 270

Mix all of these ingredients, previously reduced to fine powder, flavor and color, if desired, with carmine.

III.

Precipitated chalk.....av.oz. 20
Orris root, powder.....av.oz. 2
Tannin.....gr. 80
Oil of rose.....drops 18
Oil of cloves.....drops 15
Oil of pimento.....drops 2
Tincture of musk.....drops 80
Carmine.....gr. 8
Alcohol.....fl.dr. 1

Mix the chalk, orris and tannin, thoroughly incorporate the carmine, and then add the oils and tincture previously mixed with the alcohol.

IV.

Cuttle fish, powder.....av.oz. 8
Orris root, powder.....av.oz. 8
Chalk, precipitated.....av.oz. 16
Oil of lemon.....fl.dr. 4
Oil of neroli.....drops 80

V.

Precipitated chalk.....av.oz. 12
Pumice stone.....av.oz. 2
Cuttlefish bone.....av.oz. 2
Magnesium carbonate.....av.oz. 1
Armenian bole.....av.oz. 1
Oil of rose.....drops 2
Oil of geranium.....drops 20
Oil of cloves.....drops 20

Reduce the pumice stone and fish bone to fine powder, add the other ingredients and mix well.

VI.

Prepared chalk.....av.oz. 12
Orris root.....av.oz. 2
White castile soap.....av.oz. 1
Sugar.....av.oz. 1
Oil of wintergreen.....fl.dr. 1

Reduce the chalk, orris root and sugar to fine powder, add the oil and mix well.

VII.

Chalk, precipitated.....av.oz. 16
White castile soap, powder.....av.oz. 1
Licorice root, powder.....av.oz. 1
Magnesium carbonate.....av.oz. 2

Mix, flavor as desired, and color, if desired, with carmine.

VIII.

Talcum.....av.oz. 12
Cream of tartar.....av.oz. 1
Burnt alum.....av.oz. 1
Cochineal.....av.oz. 1
Oil of peppermint.....fl.dr. 2

Powder carefully and finely.

Tooth Cream or Paste.

I.

Cloves, powder.....av.oz. 3
Cinnamon, powder.....av.oz. 3
Orris root, powder.....av.oz. 5
Precipitated chalk.....av.oz. 10
Pumice, powder.....av.oz. 5
Oil of cloves.....fl.dr. 2
Solution of carmine.....sufficient to color
Honey.....sufficient to make paste

II.

Precipitated chalk	av.oz. 8
White castile soap, powder	av.oz. 4
Orris root, powder	av.oz. 4
Oil of sassafras	drops 40
Oil of bay	drops 80
Honey	sufficient to form paste

III.

Orris root, powder	av.oz. 8
Myrrh, powder	av.oz. 2
Pumice, powder	av.oz. 8
Oil of cloves	f.l.dr. 2
Oil of lemon	f.l.dr. 2
Oil of rose	drops 30
Solution of carmine	sufficient to color
Honey	enough to form paste

IV.

Pumice, powder	av.oz. 1
Orris, powder	av.oz. 4
White castile soap, powder	av.oz. ½
Tragacanth, powder	gr. 70
Chalk, precipitated	av.oz. 8
Solution of potassa	f.l.dr. 1
Glycerin	f.l.oz. 8
Oil of cloves	drops 20
Oil of rose	drops 15
Oil of rose geranium	drops 15

V.

Precipitated chalk	av.oz. 15
White castile soap, powder	av.oz. 15
Orris, powder	av.oz. 5
Oil of peppermint	f.l.dr. 1
Oil of cinnamon	f.l.dr. ½
Carmine	sufficient to color
Glycerin	sufficient to form a paste

VI.

Precipitated chalk	av.oz. 10
Pumice, powder	av.oz. 5
Orris, powder	av.oz. 5
Cinnamon, powder	av.oz. 3
Cloves, powder	av.oz. 3
Oil of cloves	f.l.dr. 2
Honey	sufficient

Mix the ingredients and add sufficient honey to form a mass. If a colored preparation is desired, carmine or solution of carmine may be added.

VII.

Chalk, precipitated	oz. 3
Magnesium carbonate	dr. 2
Castile soap, white, powder	gr. 40
Oil of cloves	m. 1
Oil of cassia	m. 1
Oil of sweet orange	m. 1
Oil of lavender flowers	m. 1
Oil of rose geranium	m. 3
Glycerin	f.l.oz. 1
Water	f.l.dr. 6

Mix the first three ingredients, add the

oils, then the glycerin and water previously mixed, and triturate until well mixed.

VIII.

White castile soap, powder	av.oz. 8½
Precipitated chalk	av.oz. 8½
Orris root, powder	av.oz. 8
Carmine	gr. 40
Oil of peppermint	f.l.dr. 1½

With the aid of glycerin make a paste.

IX.

Salicylic acid	av.oz. 1
Precipitated chalk	av.oz. 10
Talcum, powder	av.oz. 2½
White castile soap, powder	av.oz. 2½
Pumice stone, powder	av.oz. 2½
Sugar	av.oz. 1½
Carmine	gr. 90
Oil of peppermint	f.l.dr. 2

With the aid of glycerin make a paste.

X.

Honey	av.oz. 8
Chalk, precipitated	av.oz. 8
Orris	av.oz. 8
Carmine	gr. 60
Oil of cloves	drops 80
Oil of nutmeg	drops 80
Oil of rose	drops 80
Simple syrup	enough to form a paste

XI.

Pumice, powder	av.oz. 4
Orris, powder	av.oz. 4
Myrrh, powder	av.oz. 1
Honey	av.oz. 4
Glycerin	f.l.oz. 4
Spirit of lemon	f.l.dr. 3
Oil of cloves	f.l.dr. 1
Oil of rose	drops 16
Cochineal coloring	sufficient to color

XII.

Cream of tartar	av.oz. 10
Sugar of milk	av.oz. 10
Carmine	gr. 80
Essence of peppermint	f.l.dr. 1

Mix well and make into a paste with a mixture of 3 parts honey and 1 part glycerin by weight.

XIII.

Calcium carbonate, precipitated	av.oz. 3
Sugar	av.oz. 2
Cream of tartar	gr. 60
Glycerin	f.l.dr. 4
Rose water	f.l.dr. 12
Castile soap, white	av.oz. 8
Alcohol	f.l.oz. 2
Oil of peppermint	f.l.dr. 2
Carmine, dissolved in ammonia	gr. 60

Mix the calcium carbonate, sugar and cream of tartar, and make into a paste with a

mixture of the glycerin and 4 fluidrams of the rose water. Dissolve the soap in the alcohol and the remainder of the water by the aid of heat, add to the previous mixture, and lastly incorporate the oil and carmine.

XIV.

Precipitated chalk.....	av.oz. 16
White castile soap, powder ..	av.oz. 4
Oil of cloves.....	drops 40
Oil of nutmeg.....	drops 40
Oil of rose.....	drops 20

Form into a paste with a mixture of equal parts of glycerin and water.

XV.

Precipitated chalk.....	av.oz. 8
White castile soap, powder ..	av.oz. 4
Orris, powder.....	av.oz. 4
Oil of saffrafrs.....	drops 40
Oil of bay.....	drops 8
Honey, enough or about.....	av.oz. 13

XVI.

Orris, powder.....	av.oz. 12
Alum, powder.....	av.oz. 2
Prepared chalk.....	av.oz. 10
Cochineal.....	av.oz. 1½
Potassium bitartrate.....	av.oz. 1
Oil of cloves.....	drops 40
Oil of rose.....	drops 40
Rose water.....	fl.dr. 12
Glycerin.....	sufficient to form a mass

Tooth Wash.

I.

Quillaja, coarse powder.....	av.oz. 1½
Cochineal, powder.....	gr. 15
Glycerin.....	fl.oz. 3
Oil of wintergreen.....	drops 25
Alcohol.....	fl.oz. 10
Peppermint water, sufficient to make.....	fl.oz. 32

Mix the quillaja with the alcohol and 12 fluidounces of peppermint water, macerate for a few days, add the cochineal, glycerin and oil, macerate for another day, agitating occasionally and filter, adding the remainder of the water through the filter.

II.

Castile soap, shavings.....	av.oz. 3
Glycerin.....	fl.oz. 8
Alcohol.....	fl.oz. 12
Water, hot.....	fl.oz. 12
Oil of peppermint.....	drops 40
Oil of wintergreen.....	drops 60
Oil of cloves.....	drops 20
Tincture of vanilla.....	fl.oz. 1
Cochineal solution.....	sufficient

Dissolve the soap in the hot water, and add the glycerin and vanilla tincture. Dis-

solve the oils in the alcohol. Mix both solutions, add sufficient coloring to produce the desired shade, and after having allowed it to stand for 24 hours, filter through paper.

III.

Quillaja, powder.....	av.oz. 4
Cudbear.....	gr. 60
Diluted alcohol.....	sufficient
Heliotropin.....	gr. 2
Oil of peppermint.....	drops 20
Oil of anise.....	drops 10
Alcohol.....	fl.oz. 1
Glycerin.....	fl.oz. 2

Macerate the quillaja and cudbear with diluted alcohol or extract by percolation, in each case obtaining 30 fluidounces of product. To this add the heliotropin and oils dissolved in the alcohol, macerate for several days in a warm place, filter if necessary, and add the glycerin.

IV.

Quillaja, coarse powder.....	av.oz. 2
Orris, coarse powder.....	av.oz. ½
Borax.....	av.oz. 1
Saccharin.....	gr. 10
Oil of peppermint.....	fl.dr. 1
Oil of wintergreen.....	fl.dr. ½
Water.....	fl.oz. 18
Glycerin.....	fl.oz. 2
Alcohol.....	fl.oz. 12
Solution of carmine.....	fl.dr. 2

Mix, macerate for 7 days, agitating occasionally, and filter.

V.

Quillaja.....	av.oz. 2
Orris root.....	av.oz. 1
Canada snake root.....	av.oz. ½
Cloves.....	av.oz. ½
Alcohol.....	fl.oz. 10
Water.....	fl.oz. 5
Honey.....	fl.oz. 2

Extract the drugs in powder form by percolation, using the above mixture of alcohol and water as a menstruum; to the percolate, add the honey, and filter.

VI.

Thymol.....	gr. 30
Oil of wintergreen.....	fl.dr. 1
Oil of peppermint.....	fl.dr. 1
Compound tincture of cardamom.....	fl.oz. 2½
Glycerin.....	fl.oz. 2
Sandalwood.....	av.oz. 1
Tincture of quillaja.....	fl.dr. 2
Alcohol.....	fl.oz. 13
Water, enough to make.....	fl.oz. 32

Dissolve thymol and oils in alcohol, add other ingredients, let stand at least 24 hours and filter.

VII.

White castile soap	av.oz.	2
Oil of orange peel	drops	15
Oil of cinnamon	drops	10
Water	fl.oz.	8
Alcohol	fl.oz.	8
Liquor coccineus, N. F.	sufficient to color	
Dissolve, mix and filter.		

VIII.

Alcohol	fl.oz.	10
Water	fl.oz.	12½
White castile soap	av.oz.	2¾
Oil of wintergreen	drops	20
Red saunders	sufficient	

Dissolve the soap in a mixture of the alcohol and water, add the saunders, flavor with the oil, add enough water to make the liquid measure 80 fluidounces, and filter.

IX.

Quillaja	av.oz.	8
Star anise	av.oz.	1
Cloves	gr.	120
Cinnamon	gr.	120
Cudbear	gr.	60
Oil of peppermint	drops	12
Diluted alcohol	sufficient	

Mix the drugs, reduce to powder, and extract by percolation with diluted alcohol so as to obtain 32 fluidounces of product in which the oil is to be dissolved.

X.

Castile soap, white	av.oz.	¾
Myrrh, bruised	av.oz.	1½
Spirit of lemon	dr.	2
Oil of peppermint	drops	15
Oil of star anise	drops	15
Oil of wintergreen	drops	5
Glycerin	fl.oz.	2
Acetic ether	fl.dr.	2
Alcohol	fl.oz.	24
Water	fl.oz.	8
Alkannin or alkanet	sufficient to color	

Dissolve the soap in one-half the alcohol and water mixed; macerate the myrrh with the remainder of the alcohol and water for several days, filter each, mix and add the remainder of the ingredients. If the mixture is to be colored with alkannin, it may be added now; if alkanet is used, it may be added to the myrrh during maceration.

XI.

Soap bark, powder	av.oz.	4
Glycerin	fl.oz.	3
Diluted alcohol	fl.oz.	30
Oil of wintergreen	drops	20
Oil of peppermint	drops	20

Macerate the soap bark in the mixture of

glycerin and dilute alcohol for three or four days, and filter through a little magnesia previously triturated with the volatile oils.

XII.

Castile soap, white	gr.	270
Glycerin	fl.oz.	5
Simple syrup	fl.oz.	2
Water	fl.oz.	13
Alcohol	fl.oz.	13
Tincture of cardamom	fl.dr.	2
Tincture of Canada snakeroot	fl.dr.	2
Oil of peppermint	drops	25
Oil of wintergreen	drops	25
Oil of cloves	drops	6
Oil of cassia	drops	6
Solution of carmine	sufficient to color	

Mix the soap, glycerin, syrup and water, stir well and add the alcohol. Add the remainder of the ingredients, let stand a few days and filter at a low temperature, so that no soap will afterward precipitate.

XIII.

Quillaja	av.oz.	2
Orris root	gr.	120
Cinnamon	gr.	120
Cochineal	gr.	60
Benzoic acid	gr.	120
Tannin	gr.	60
Borax	gr.	60
Oil of wintergreen	m.	30
Oil of peppermint	m.	30
Sugar	av.oz.	4
Glycerin	fl.oz.	2
Alcohol	fl.oz.	10
Water	fl.oz.	20

Reduce the drugs to powder, add to the remaining ingredients, macerate for at least 7 days, agitating occasionally, and filter.

XIV.

White castile soap	av.oz.	2
Oil of peppermint	drops	20
Oil of wintergreen	drops	50
Glycerin	fl.oz.	2
Water	fl.oz.	4
Alcohol	fl.oz.	8
Solution of cochineal	sufficient to color	

Dissolve the soap in the alcohol and water, add the other ingredients, and filter.

XV.

Quillaja bark	gr.	280
Cochineal	gr.	10
Oil of wintergreen	m.	40
Alcohol	fl.oz.	4½
Peppermint water	fl.oz.	5
Glycerin	fl.oz.	2
Water, enough to make	fl.oz.	30

Mix the cochineal and quillaja with 4 fluidounces of alcohol and 6 of water, macerate

for 7 days, agitating occasionally; filter, and add the remaining ingredients.

This may be pleasantly modified by the addition of a few drops of either oil of cinnamon or oil of cloves, or both.

Tooth Soaps.

I.

Precipitated chalk	av.oz. 4
Carmine	gr. 25
White castile soap, powder	av.oz. 10
Oil of peppermint	fl.dr. 2½
Alcohol	fl.oz. 1½
Ammonia water	sufficient

Triturate the carmine with a few drops of ammonia water and add the precipitated chalk, mixing intimately. Dissolve the oil of peppermint in the alcohol; add the solution to the soap contained in a mortar and thoroughly incorporate; then add the precipitated chalk, and when the whole is homogeneous, transfer to suitable molds and dry.

II.

White castile soap, powder	av.oz. 10
Talcum, powder	av.oz. 4
Pumice stone, powder	av.oz. 2
Cuttle fish bone, powder	av.oz. 2
Cochineal, powder	gr. 90
Sodium carbonate, dried	gr. 180
Diluted alcohol	fl.oz. 1
Glycerin	fl.dr. 6
Oil of peppermint	fl.dr. 2
Rose water	sufficient

Mix the soap, talcum, pumice and cuttlefish bone, then add the cochineal previously triturated to a fine powder. Having mixed these ingredients thoroughly, add the soda, alcohol and glycerin, stirring well, incorporate the oil, and then add enough rose water to form a mass. Divide into pieces or press in the boxes, and allow to dry.

III.

White castile soap, powder	av.oz. 10
Tincture of rhatany	fl.oz. 3¼
Precipitated chalk	av.oz. 3¼
Benzoic acid	av.oz. ½
Potassium chlorate, powder	av.oz. ¾
Borax, powder	av.oz. ¾
Saccharin	gr. 10
Oil of cinnamon	sufficient to flavor

Make into a hard mass by the addition of glycerin and water, press into tin boxes, and dry.

IV.

Talcum, powder	av.oz. 10
Pumice, powder	av.oz. ½
Orris root, powder	av.oz. 2

Mix well and color with carmine if a pink or red color is desired, and with chlorophyll, if a green color is desired, and flavor with a mixture consisting of:

Oil of peppermint	fl.dr. 2½
Oil of sage	fl.dr. 1¼
Oil of calamus	fl.dr. 1
Oil of thyme, white	fl.dr. ½
Coumarin	gr. 20

Now mix

White castile soap, powder	av.oz. 10
Alcohol	fl.oz. 5
Glycerin	fl.oz. 1½

Beat together to form a soft paste, and then gradually incorporate the previous mixture of powders. Press the mass into molds, and, after removing the cakes, brush the latter over with tincture of benzoin containing a little oil of peppermint. When dry, cover with tin foil. The mass may also be pressed into tin boxes and allowed to dry in the latter.

Camphorated Tooth Powder.

I.

Precipitated chalk	av.oz. 10
Orris root, powder	av.oz. 5
Camphor	av.oz. 1

II.

Prepared chalk	av.oz. 8
Orris root	av.oz. 4
Camphor	av.oz. 2
Cinnamon	av.oz. 1

Reduce all to powder, and mix well.

III.

Prepared chalk	av.oz. 16
Camphor	av.oz. 8
Cuttlefish bone	av.oz. 4
Myrrh	av.oz. 2
Borax	av.oz. 2
Rose pink	av.oz. 1

Reduce all to powder, and mix well.

Charcoal Tooth Powder.

I.

Orris root	av.oz. 5
Myrrh	av.oz. 5
Charcoal	av.oz. 11
Cinchona	av.oz. 11

All should be in very fine powder and the whole should be well mixed and finally passed through a fine sieve.

II.

Charcoal	av.oz. 12
Myrrh	av.oz. 2
Pale cinchona	av.oz. 2

Mix well, having first reduced each to fine powder,

Harlan's Tooth Paste.

Precipitated chalk.....	av.oz. 8
Orris root, powder.....	av.oz. 8
White castile soap, powder....	av.oz. 2
Borax, powder.....	av.oz. 2
Myrrh, powder.....	av.oz. 1
Honey,	
Glycerin	
of each sufficient to form a soft paste	
Carmine.....	sufficient to color

Perfume to suit.

Hunter's (John) Tooth Powder.

Cream of tartar.....	av.oz. 12
Alum.....	av.oz. 2 1/4
Cochineal.....	av.oz. 2
Cinnamon	av.oz. 1
Sugar	av.oz. 4

Mix all, reducing to fine powder. Color, if desired, with carmine.

Marshall's or Hudson's Dentifrice.

Chalk, prepared	av.oz. 15
Myrrh, powder.....	av.oz. 5
Orris, powder.....	av.oz. 5
Rose pink.....	gr. 125

Mix well, reduce to fine powder, and sift.

Menthol Glycerin Tooth Cream.

Precipitated chalk.....	av.oz. 8
White castile soap, powder....	av.oz. 4
Magnesium carbonate.....	av.oz. 2
Menthol (dissolved in alcohol),	
Solution of carmine,	
Glycerin.....	of each, sufficient

Rub the first three ingredients into a paste with glycerin, then flavor and color to suit with the menthol and carmine solutions.

Rose Tooth Powder.

Prepared chalk.....	av.oz. 22 1/2
Sugar of milk	av.oz. 8
Orris root, powder.....	av.oz. 1 1/2
Carmine.....	gr. 16
Oil of rose.....	drops 16

Rub the chalk, orris root and 5 av.ounces of the sugar of milk together in a capacious mortar, and pass the mixture through a No. 80 sieve. Then rub the carmine in the mortar, and gradually add to it, while rubbing, the remaining 3 av.ounces of sugar of milk. To this mixture add the oil of rose, and, after rubbing all well together, add to it about 3 av.ounces of the sifted mixture. Stir this well together and also pass it through the sieve. Finally return all the sifted powder

into the mortar and thoroughly mix the whole of it.

Quinine Tooth Powder.

Precipitated chalk.....	av.oz. 29
Orris root.....	av.oz. 3 1/2
Sugar of milk	av.oz. 3 1/2
Saccharin.....	gr. 4
Pumice stone.....	gr. 390
Magnesium carbonate.....	gr. 390
Tannic acid.....	gr. 800
Quinine hydrochlorate.....	gr. 80
Oil of rose.....	drops 16
Oil of peppermint.....	drops 80
Oil of ylang ylang.....	drops 5
Oil of bitter almonds.....	drops 5

Mix all, and reduce to a fine, uniform powder.—D.

Salicylated Tooth Powder.

Sodium salicylate.....	gr. 120
Sodium bicarbonate.....	av.oz. 4
Precipitated chalk.....	av.oz. 16
Myrrh	av.oz. 3 1/4
White castile soap	av.oz. 1 1/2
Orris root.....	av.oz. 3
Licorice.....	av.oz. 2
Oil of wintergreen.....	drops 3
Oil of rose geranium.....	drops 30

Reduce the myrrh, soap, orris and licorice to fine powder, mix all the ingredients, and color, if desired, with carmine or solution of carmine.

Salicylated Tooth Paste.

Precipitated chalk.....	av.oz. 16
White castile soap, powder....	av.oz. 4
Sugar, powder.....	av.oz. 4
Orris, powder	av.oz. 4
Pumice, powder	av.oz. 1 1/2
Sodium salicylate.....	gr. 80
Glycerin	fl.oz. 2
Carmine or solution of car-	
mine.....	sufficient to color
Water	sufficient to form a mass

Mix well and perfume with oil of peppermint, wintergreen or other oil.

Saponaceous Tooth Powder.

I.

White castile soap, powder....	av.oz. 8
Precipitated chalk.....	av.oz. 4
Magnesium carbonate.....	av.oz. 2
Sugar, powder.....	av.oz. 2
Oil of wintergreen....	sufficient to flavor

II.

Precipitated chalk.....	av.oz. 14
White castile soap, powder....	av.oz. 2
Saccharin	gr. 4
Oil of wintergreen.....	drops 8

Thymol Tooth Paste.

Calcium carbonate.....	av.oz. 16
Magnesium carbonate.....	av.oz. $\frac{3}{4}$
Orris root, powder.....	av.oz. 8
Thymol.....	gr. 60

Mix well and make a mass with sufficient of the following mixture:

Gelatin, pure.....	gr. 70
Glycerin.....	fl.oz. 3
Water.....	fl.oz. 1

Dissolve by the application of a gentle heat.

Thymol Tooth Powder.

Precipitated chalk.....	av.oz. 15
White castile soap, powder...	av.oz. 1
Saccharin.....	gr. 10
Thymol.....	gr. 15
Camphor.....	gr. 30
Vanillin.....	gr. 5
Oil of rose.....	drops 6

Rub the camphor and thymol together in a mortar, and warm gently so as to render the mixture liquid; then add the chalk in small portions at a time, reserving about 1 av. ounce; next add the other ingredients, the perfumes being first separately rubbed with the remainder of the chalk.

Mouth Washes.

These are preparations intended for cleansing, purifying and deodorizing the mouth, and frequently also for cleansing the teeth; before use, they are usually diluted with water, about one teaspoonful being added to a cupful of the latter. They always contain antiseptic and flavoring constituents, usually also an astringent substance like tannic acid, kino, rhatany, oak bark, etc., and frequently also a coloring constituent.

They are usually dispensed under such names as "prophylactic tooth and mouth wash," "dentifrice elixir," "thymol dentifrice," "salol mouth wash," "aromatic mouth wash," "astringent mouth wash," "chinoline mouth wash," "tooth tincture," "mouth essence," "elixir of roses," "violet mouth wash," "rubicreme," "favorite tooth and mouth wash," "mentholated dentifrice," "mentholine tooth wash," "eau dentifrice," "Imperial mouth wash," "salicylated mouth wash," "eau angelique," "carbolated tooth wash," "arnica tooth wash," "mouth water," etc.

I.

Salol.....	gr. 75
Alcohol.....	fl.oz. 16
Solution of cochineal.....	fl.dr. 4
Oil of rose.....	drops 8
Oil of peppermint.....	drops 15

Dissolve the salol in the alcohol, add the remaining ingredients, and filter.

II.

White oak bark.....	av.oz. $2\frac{1}{2}$
Rhatany root.....	av.oz. $\frac{1}{2}$
Sassafras.....	gr. 60
Red cinchona.....	gr. 180
Cardamom seeds.....	gr. 30
Cloves.....	gr. 30
Ceylon cinnamon.....	gr. 20
Oil of wintergreen.....	fl.dr. 1
Oil of anise.....	fl.dr. $\frac{1}{4}$
Alcohol,	
Water.....	of each, sufficient

Reduce the solid substances to a coarse powder, and extract by percolation so as to obtain 32 fluidounces of product, using as menstruum a mixture of 3 volumes of water and 5 of alcohol; to the percolate add the two oils.

III. The preparation known by the name "Eau de Botot," is dispensed according to different formulas, as follows:

A.

Star anise.....	gr. 720
Cassia.....	gr. 288
Cloves.....	gr. 288
Cochineal.....	gr. 72
Water.....	fl.oz. 8
Alcohol.....	fl.oz. 24
Oil of peppermint.....	fl.dr. $1\frac{1}{4}$
Oil of rose.....	drops 10

Mix the drugs, reduce to coarse powder, add the alcohol and water, macerate for 7 days, agitating occasionally, filter, and add the oils. The drugs may also be extracted by percolation as in the preceding formula.

B.

Cloves.....	av.oz. $\frac{1}{2}$
Cinnamon.....	av.oz. $\frac{1}{4}$
Star anise.....	av.oz. $\frac{1}{2}$
Rose water.....	fl.oz. $3\frac{1}{2}$
Alcohol.....	fl.oz. 30
Cochineal, powder.....	gr. 48
Cream of tartar.....	gr. 72
Oil of peppermint.....	fl.dr. $1\frac{1}{4}$

Reduce the cloves, cinnamon and anise to coarse powder, macerate in the rose water and alcohol for 24 hours, add the remaining ingredients, macerate for another 24 hours, agitating frequently, and filter.

C.

Star anise	gr. 360
Cloves	gr. 360
Galanga	gr. 360
Ceylon cinnamon	gr. 360
Cochineal	gr. 144
Tannic acid	gr. 72
Peru balsam	gr. 72
Oil of peppermint	fl.dr. 2½
Oil of rose	drops 15
Oil of neroli	drops 8
Oil of orris	drop 1
Coumarin sugar	gr. 15
Water	fl.oz. 8
Alcohol	fl.oz. 24

Reduce the drugs to powder, mix all the ingredients, macerate for 8 days, agitating occasionally, and filter.—D.

This preparation may also be made by extracting the mixed and ground drugs by percolation, by means of a mixture of one volume of water and 3 of alcohol, so as to obtain 32 fluidounces of percolate; to the latter, add the acid, balsam, oils and sugar, and dissolve.

IV.

Kino, powder	av.oz. 5
Tincture benzoin	fl.dr. 1
Tincture tolu	fl.dr. 1
Tincture vanilla	fl.dr. ½
Oil of peppermint	fl.dr. 1
Oil of anise	fl.dr. ½
Oil of cinnamon	fl.dr. ½
Alcohol	fl.oz. 32

Mix, macerate for 7 days, agitating occasionally, and filter.

This preparation is known as Eau de Mialhe.

V.

Myrrh, powder	av.oz. 1
Borax, powder	av.oz. 1
Red saunders	av.oz. 1
Sugar	av.oz. 1
Cologne water	fl.oz. 6
Alcohol	fl.oz. 18
Water	fl.oz. 9

Mix, macerate for several days, agitating occasionally, and filter.

VI.

Chinoline tartrate	gr. 150
Oil of peppermint	fl.dr. 1½
Alcohol	fl.oz. 4
Water	fl.oz. 28

Add a teaspoonful to a tumblerful of water and use as a mouth wash.

VII.

Oil of sage	fl.dr. 2¼
Oil of lemon	fl.dr. 1¼
Alcohol	fl.oz. 6½
Water	fl.oz. 25½

This preparation has been known as Eau de Salvia.

VIII.

Oil of sassafras (preferably "Safrol")	fl.dr. 2
Oil of pinus pumilio	fl.dr. ½
Oil of curacao	fl.dr. ½
Oil of wintergreen	drops 8
Oil of calamus	drops 10
Oil of anise	drops 2
Oil of rose geranium	drops 2
Oil of vetivert	drops 2
Betanaphthol	gr. 20
Solution of saccharin	fl.dr. 1½
Chloroform	fl.dr. ½
Glycerin	fl.oz. 2¼
Alcohol	fl.oz. 8
Calcium phosphate	av.oz. ¼
Water, enough to make	fl.oz. 32

In the alcohol dissolve the oils, naphthol, and chloroform. Add to the solution the glycerin and solution of saccharin, and gradually add water until the product measures 32 fluidounces. Allow the mixture to stand some time, frequently shaking; then mix it intimately with the calcium phosphate, and filter.

IX.

Saccharin	gr. 2
Sodium bicarbonate	gr. 60
Salicylic acid	av.oz. ½
Alcohol	fl.oz. 32

Mix, dissolve, and filter.

A few drops in a glass of water make a gargle or collutory which is to be used frequently for bad breath.

X.

Potassium permanganate	gr. 30
Distilled water	fl.oz. 4

Use a teaspoonful to a tumblerful of water for a mouth wash.

Lip Salves or Pomades.

These are preparations for anointing the lips to cure or prevent "cracking." They consist usually of white or yellow wax, spermaceti, paraffin, cacao butter, petrolatum, or lard mixed with an oil like olive or sweet almond, the whole being flavored, usually with oil of rose. Frequently they are tinted

a rose color by means of carmine, alkannin, or alkanet root. The first mentioned must first be triturated to very fine powder before adding oil or fat, and during cooling the fatty mixture must be frequently stirred to prevent it from subsiding. Alkannin is easier to use because it dissolves in the fats. Alkanet colors the fatty mixture during a rather prolonged maceration assisted by heat. If a colored preparation is to be made, yellow wax should be substituted for white wax, wherever the latter is mentioned, owing to the better keeping qualities of the former. Camphor may be added to these preparations, also salicylic acid.

The preparations are usually known by such titles as "rose lip salve," "tulip salve," "salicylated lip salve," "lip pomade," "rose cerate," "lip ointment" and "coral lip salve."

I.

White wax.....	av.oz. 1
Sweet almond oil.....	fl.oz. 2
Carmine.....	gr. 1
Oil of rose.....	drop 1

Melt the wax, add the sweet almond oil, triturate the carmine to very fine powder, mix intimately with the fats, and then incorporate the oil of rose.—Codex.

II.

White wax.....	av.oz. 1
Spermaceti.....	av.oz. 1
Liquid petrolatum.....	fl.dr. 6
Tincture of benzoin.....	fl.dr. 2
Alkanet root, bruised.....	gr. 120
Oil of rose ..	drop 1

Melt the wax and spermaceti, add the liquid petrolatum and the root, macerate the latter with the melted fats for about one-half hour, strain, allow to cool somewhat, and incorporate the tincture and oil.

III.

Spermaceti.....	av.oz. 2
Yellow wax.....	av.oz. 1
Sweet almond oil.....	fl.oz. 4
Oil of rose.....	drops 5
Alkanet root.....	sufficient to color

Melt the fats, add the almond oil, color with the alkanet, strain and add the rose oil.

IV.

Spermaceti.....	av.oz. 1
Lard.....	av.oz. 2
White wax.....	av.oz. ½
Sweet almond oil.....	fl.dr. 2

Mix and melt; if a colored preparation,

add a small amount of bruised alkanet root, macerate for a short time at a moderate temperature, strain and perfume to suit.

V.

Paraffin wax.....	av.oz. 2
Cacao butter.....	av.oz. 2
Petrolatum, white.....	av.oz. 2½
Eosin.....	gr. 3
Oil of rose.....	drops 3

Dissolve the last two ingredients in a minimum quantity of alcohol, and add to the fats when melted.

VI.

Yellow wax.....	av.oz. 1
Olive oil.....	fl.oz. 1
Alkanet root, bruised.....	gr. 35
Oil of rose.....	drops 2

Melt the wax, add the oil and root, macerate at a moderate heat for an hour, strain, allow to cool somewhat and incorporate the oil.—H.

VII.

White wax.....	av.oz. ½
Spermaceti.....	av.oz. ½
Sweet almond oil.....	fl.oz. 1
Oil of rose.....	drop 1

Melt the wax and spermaceti, add the almond oil, and incorporate the oil of rose.

—D:

VIII.

Yellow wax.....	av.oz. 1½
Spermaceti.....	av.oz. ½
Sweet almond oil.....	fl.oz. 8
Oil of lemon.....	drops 10
Oil of bergamot.....	drops 10
Alkannin.....	gr. 5

Melt the wax and spermaceti, add the almond oil, and add the remaining ingredients.—D.

IX. To the latter may be added, if desired, 12 grains of salicylic acid.—D.

X.

Cacao butter.....	av.oz. 4
White wax.....	av.oz. ½

Mix by fusion, and perfume to suit.

XI.

Cold cream.....	av.oz. 4
Glycerin.....	fl.dr. 2
Tincture of benzoin.....	fl.dr. 1
Carmine.....	sufficient to color

Rub the carmine with the glycerin, and incorporate with the cold cream; then add the tincture of benzoin, and rub the ointment

until the alcohol of the tincture has evaporated.

XII.

Carmine, fine powder.....gr. 5
Glycerin.....fl.dr. 2
Cold cream.....av.oz. 4

Rub the carmine with the glycerin and intimately mix with the cold cream. If not the shade to suit, more or less carmine may be used.

This and the preceding preparation may be entitled "rose lip cream."

Cachoua.

These consist of the various aromatics combined with licorice extract, sometimes sugar, the whole being formed into a mass which may be divided into pellets, or it may be rolled out in a thin sheet and cut into little squares, or it may be rolled out into a very thin pill "pipe," which may then be cut into short sections. After dividing the mass, the particles may be dried. If desired, the pellets may be silver-coated.

I.

Oil of peppermint.....drops 80
Oil of lemon.....drops 20
Oil of neroli.....drops 20
Oil of cinnamon.....drops 20
Cloves.....gr. 40
Cardamom.....gr. 80
Vanilla.....gr. 120
Orris root.....gr. 150
Mace.....gr. 400
Sugar.....gr. 800
Licorice extract, powder....av.oz. 1½
Mucilage of gum arabic.....sufficient

Reduce the drugs to powder, add the remaining ingredients, make a mass and divide into pills weighing 1 grain each, or roll out flat and cut into small pieces.

II.

Licorice extract.....av.oz. 3
Gum arabic.....av.oz. ½
Catechu.....av.oz. 1
Mastic.....gr. 60
Cascarilla.....gr. 60
Charcoal.....gr. 60
Orris root.....gr. 60
Oil of peppermint.....fl.dr. ½
Water.....fl.oz. 3

Dissolve the licorice in the water on a water bath, add the gum arabic and catechu, evaporate to the consistence of an extract, add the remaining solids reduced to fine powder, and finally when of proper consistence re-

move from the fire, add the oil of peppermint, and divide into small pellets, or roll the mass out flat and cut into small pieces.

III.

Licorice extract, powder.....av.oz. 2
Oil of cloves.....fl.dr. 1
Oil of cinnamon.....drops 10

Mix well, add sufficient mucilage of acacia to form a mass, and divide into pellets, or roll out flat and cut into small pieces.

IV.

Nutmeg.....gr. 192
Cardamoms.....gr. 140
Vanilla.....av.oz. ½
Cloves.....gr. 64
Orris.....gr. 256
Musk.....gr. 1
Oil of peppermint.....fl.dr. 1
Oil of lemon.....m. 40
Oil of cinnamon.....drops 10
Oil of neroli.....drops 20
Sugar.....av.oz. 1½
Licorice.....av.oz. 2½
Extract of licorice soft
Water.....of each, sufficient

Reduce the drugs to fine powder, add the remaining ingredients, mix well, make a mass with the extract and water, form into pellets, or roll the mass out and cut into small pieces.

V.

Extract of licorice.....av.oz. 3
Catechu, powder.....av.oz. 1
Sugar powder.....av.oz. 1
Tragacanth, powder.....av.oz. ½
Oil of cloves.....fl.dr. 1
Oil of cassia.....fl.dr. ½
Oil of nutmeg.....drops 10

Make a mass with water and divide into 1-grain pills.

VI.

Orris root, powder.....av.oz. 5
Musk.....gr. 5
Coumarin.....gr. 12
Vanillin.....gr. 20
Oil of rose.....drops 10
Oil of neroli.....drops 20
Oil of peppermint.....drops 20
Oil of spearmint.....drops 20
Oil of ylang ylang.....drops 5
Purified extract of licorice....sufficient

Mix the orris root with the remaining ingredients, add enough extract to form a mass. Divide this into pellets, or roll out flat and cut into pieces.

VII.

Sugar, powder.....	av.oz.	3
Licorice, powder.....	av.oz.	3
Oil of anise.....	drops	20
Oil of fennel.....	drops	5
Purified extract of licorice.....	sufficient	

Mix the first four ingredients, then add enough of the latter to form a mass, divide into pellets, or roll out flat and cut into small pieces.—D.

VIII.

Soft extract of licorice.....	av.oz.	8
Catechu, fine powder.....	av.oz.	8
Sugar, finely pulverized.....	av.oz.	1
Tragacanth, powder.....	av.oz.	½
Oil of cloves.....	fl.dr.	1
Oil of cassia.....	fl.dr.	½
Oil of nutmeg.....	fl.dr.	½
Tincture of ambergris.....	drops	12
Orange flower water.....	sufficient	

With the aid of the water heat into a hard pillular mass, which divide into 2-grain cachous.

SECTION V—PREPARATIONS FOR THE BATH.

Bath Powder.

I.

Tartaric acid.....	av.oz.	10
Sodium bicarbonate.....	av.oz.	9
Starch.....	av.oz.	6

A few spoonfuls of this when stirred into a bathtubful of water cause a copious liberation of carbon dioxide, which is thought by some to be "refreshing."

Perfume may be added to this powder, volatile oils being a good form. Oil of lavender flowers would be a suitable addition in the proportion of a fluidram or more to the av.pound of powder. A better but more expensive perfume may be obtained by mixing 1 part of oil of rose geranium with 6 parts of oil of lavender flowers.

A perfume still more desirable may be had by adding a mixture of the oils from which cologne water is made. For an ordinary quality the following will suffice:

Oil of lavender flowers.....	fl.dr.	1
Oil of rosemary.....	fl.dr.	1
Oil of bergamot.....	fl.dr.	2
Oil of lemon.....	fl.dr.	4
Oil of cloves.....	drops	8

For the first quality the following may be taken:

Oil of neroli.....	fl.dr.	2
Oil of rosemary.....	fl.dr.	1
Oil of bergamot.....	fl.dr.	1
Oil of cedrat.....	fl.dr.	2½
Oil of orange.....	fl.dr.	2½

A fluidram or more of either of these mixtures may be used to the pound, as in the case of lavender.

II.

Borax, powder.....	av.oz.	4
Salicylic acid.....	gr.	60
Essence of cassia.....	fl.dr.	1
Essence of jasmine.....	fl.dr.	1
Oil of lavender flowers.....	drops	20

Rub the oil and extracts with the borax and acid until the alcohol has evaporated. Use a heaping teaspoonful to the body bath.

III.

Borax.....	av.oz.	8
White castile soap.....	av.oz.	8

Mix both ingredients, first reduced to powder, and perfume, if desired, as directed in No. I.

Bath Tablets.

These are formed from the preceding powders by moistening with alcohol; No. 3 may be moistened with water to form tablets.

Artificial Sulphur Baths.

Sulphur baths ordinarily are made by simply dissolving potassium sulphuret (sulphurated potassa) in water, in the proportion of from ¼ av.ounce to 2 av.ounces for every 40 gallons of water. But, in order to obtain a bath more closely resembling some of the more noted natural sulphurous springs which have proven so effectual in the treatment of rheumatism and skin diseases of certain types, the following is advised:

Sulphurated potassa or soda.....	av.oz.	½
Sodium bicarbonate.....	av.oz.	1
Sodium chloride.....	gr.	60
Castile soap shavings.....	gr.	30
Alum.....	gr.	30
Calcium carbonate.....	gr.	30
Water.....	gal.	1

These various materials are boiled in a sufficient quantity of the water to dissolve them, and the solution is stirred about with a wooden or glass rod until an odor of sulphuretted hydrogen becomes manifest. The solution is then poured into the patient's ordinary water bath, previously heated to about 35 degs. C.

PART VI.

SODA WATER PREPARATIONS.

Coloring for Syrups.

In coloring either orange syrup or strawberry red, nothing is perhaps equal to a good black raspberry juice. It makes a nice color and is unobjectionable in every way.

Another convenient and excellent preparation is cochineal coloring, N. F., which may be prepared as follows:

Cochineal, powder.....	gr. 480
Potassium carbonate.....	gr. 240
Alum.....	gr. 240
Cream of tartar.....	gr. 480
Glycerin.....	fl.oz. 8
Alcohol.....	fl.oz. 1
Water, enough to make.....	fl.oz. 16

Triturate the cochineal intimately with the potassium carbonate and 8 fluidounces of water. Then add the alum and then the cream of tartar; heat the mixture to boiling in a capacious vessel; set it aside to cool, add the glycerin and alcohol, filter, and pass enough water through the filter to make 16 fluidounces.

Essence, Birch.

Oil of wintergreen.....	fl.oz. 5
Oil of lemon.....	fl.dr. 2
Oil of cloves.....	fl.dr. 1/2
Extract of vanilla.....	fl.oz. 4
Alcohol.....	fl.oz. 12

Dissolve the oils in the alcohol, and add the extract of vanilla.

Essence of Ginger, Soluble.

I.	
Fluid extract of ginger.....	fl.oz. 4
Pumice, fine powder.....	av.oz. 1
Water, enough to make.....	fl.oz. 12

Introduce the fluid extract into a bottle, add the pumice, and shake the mixture thoroughly and repeatedly during the course of several hours. Then add the water in portions of about 2 fluidounces, shaking well and repeatedly after each addition. When all is added, repeat the agitation occasionally during 24 hours, then filter, returning the first portions of the filtrate until it runs through clear, and, if necessary, pass enough

water through the filter to make 12 fluidounces.—N. F.

II.

Jamaica ginger, ground.,	av.oz. 16
Alcohol.....	fl.oz. 8

Mix, let stand for several hours, and with same menstruum percolate to obtain 24 fluidounces. To this tincture, add 2 av.ounces heavy magnesium carbonate, shake well, and add 24 fluidounces of water, shake again, and filter. If the filtrate is turbid, add more magnesium carbonate and filter again. It deposits slightly on standing a few days, but if again filtered, it remains clear.

Essence, Mead.

Oil of cloves.....	drops 20
Oil of pimento.....	drops 10
Oil of nutmeg.....	drops 30
Oil of coriander.....	drops 10
Oil of sassafras.....	drops 20
Oil of cinnamon.....	drops 5
Oil of lemon.....	fl.dr. 2
Extract of vanilla.....	fl.oz. 4
Alcohol.....	fl.oz. 8
Water.....	fl.oz. 4
Magnesium carbonate.....	dr. 4

Mix the oils, dissolve in the alcohol, add vanilla and water and rub with magnesia and pass through filter, to make 1 pint; use of this essence 1 fl.ounce to 1 gallon of the finished syrup.

Essence, Sarsaparilla.

I.

Oil of wintergreen.....	fl.dr. 4
Oil of sassafras.....	fl.dr. 4
Alcohol.....	fl.oz. 16

II.

Oil of wintergreen.....	fl.dr. 4
Oil of sassafras.....	fl.dr. 8
Oil of anise.....	fl.dr. 1
Alcohol.....	fl.oz. 12
Water, enough to make.....	fl.oz. 16

Dissolve the oils in the alcohol and add the water.

III.

Oil of wintergreen.....	fl.dr. 2
Oil of anise.....	fl.dr. 2
Oil of sassafras.....	fl.dr. 8
Alcohol, enough to make.....	fl.oz. 16

Extract of Vanilla.

It may be said that the process of manufacture has less to do with the quality of a vanilla extract than, first, the quality of the bean employed, and, next, the skill of the operator. Thirdly, it may be added, a vanilla extract greatly improves by aging. "The only requirements are cologne spirits, water, sugar, good beans, and time, especially the latter two." The value of glycerin, advised by some, is doubtful.

I. Vanilla.....	av.oz. 1
Rock candy.....	av.oz. 2
Alcohol, deodorized.....	fl.oz. 9
Water.....	fl.oz. 7

Cut the vanilla in small pieces with a sharp knife or scissors, transfer to an iron mortar and beat, with the rock candy, into a fine powder. The sugar should be added in divided portions. Place this in a bottle with the alcohol; allow to macerate, with occasional shaking, for 24 hours, then add the water and continue the maceration for 2 days, or as much longer as is convenient. Finally express and filter.

II.	
Vanilla, cut fine.....	av.oz. 1
Alcohol, deodorized.....	fl.oz. 10
Water.....	fl.oz. 6

Mix the liquids. Put one-third of the mixture into a suitable water bath apparatus with the cut beans. Cover closely, and heat to not over 60 degs. C. for 1 hour, and remove the heat. Drain off the liquid, add another third of the liquid, repeat the process, and again with the remaining portion of the menstruum. Put the beans in a percolator and, having mixed 2 fluidounces of menstruum in the proportions given (5:8), percolate to remove the last traces of the extract from the beans. Filter the mixed liquids and pour the percolate on the filter to remove the adherent extract.

It will be an advantage to triturate the beans with rock candy, granulated sugar, or clean sand before adding to the liquid. The ignition of alcoholic vapors must carefully be guarded against.

III.	
Vanilla.....	av.oz. 1
Tonka.....	av.oz. 2
Alcohol, deodorized.....	fl.oz. 32
Syrup.....	fl.oz. 8

Cut and bruise the vanilla, afterward adding and bruising the tonka; macerate for 14 days in 16 fluidounces of the alcohol, with occasional agitation; pour off the clear liquid and set aside; pour the remaining alcohol on the magma, and heat by means of a water bath to about 77 degs. C., in a closely covered vessel. Keep it at that temperature for 2 or 3 hours, then strain through flannel with slight pressure; mix the two portions of liquid and filter through felt. Lastly add the syrup. To render this tincture perfectly clear it may be treated with pulverized magnesium carbonate, using from $\frac{1}{2}$ to 1 av.ounce to each pint.

Fruit Juices.

Carefully select the fruits, and if necessary, as happens with berries, pick out the unripe or decayed ones. Mash the fruit in a tub or barrel by means of a wooden pounder, and leave the pulp in a cool place, at a temperature of about 21 degs. C. for 12 or 24 hours, or until the liquid, when taken in a silver spoon, appears perfectly bright. This shows that the alcoholic fermentation necessary to separate the pectin and other gummy matters has taken place. Then press out the juice, add to it for each 16 fl.ozs. of liquid one fluidounce of cologne spirit, set aside for one night, and filter through paper. The filtrate is now ready to be made into syrup by the addition of the requisite proportion of sugar. If the juice is to be preserved as such, the following, known as Appert's Process, is recommended.

Collect the juice after expression, and omitting the addition of alcohol and the filtering through paper, introduce it into strong bottles—champagne are very good—taking care to leave ample space for the expansion of the liquid. The bottles being well corked and the corks secured with stout cord, are now placed in a vessel of sufficient depth. To prevent breakage, a cloth or a thin board with holes is laid under the bottles, and straw is packed loosely between them. The vessel is then filled with cold water to a height sufficient to cover the bottles up to the shoulder, placed over a gentle fire, and the water slowly brought to ebullition. The boiling is kept up for about 10 minutes,

when the vessel is to be removed from the fire, and the whole allowed to cool down. Lastly, the bottles are sealed by dipping the top in melted sealing wax.

Fruit Pulp.

To prepare fruit pulp take a quantity of thoroughly ripe fruit; rub and press it to a pulp through a hair sieve into earthen or stoneware pans; add a quarter of a pound of white granulated sugar to each pound of pulp; mix thoroughly; fill the bottle to the neck; cork and tie down with wire; place them in a boiler of cold water as above directed; put over the fire; boil gently for 20 minutes; when cold seal the corks and put the bottles in a cool place, laying them sideways.

Ginger Ale.

Soluble essence of ginger.....	fl.oz. 6
Citric acid.....	av.oz. 1½
Spirit of lemon.....	fl.dr. 2
Caramel.....	av.oz. 1
Syrup.....	fl.oz. 56

This is sufficient for a 10-gallon fountain.

Lemonade Seltzer.

Juice of 1 lemon.....	
Sugar.....	4 teaspoonfuls
Cracked ice.....	sufficient
Water.....	fl.oz. 1

Mix, shake, strain and fill soda glass with seltzer water. Serve with straws.

Phosphate, Wild Cherry.

- I.

Cherry juice.....	fl.oz. 4
Syrup of wild cherry.....	fl.oz. 4
Syrupy glucose.....	fl.oz. 6
Diluted phosphoric acid.....	fl.oz. 2
Oil of bitter almonds.....	drops 2
- II.

Oil of bitter almonds.....	drops 2
Alcohol.....	fl.dr. 1
Diluted phosphoric acid.....	fl.oz. 2
Simple syrup.....	fl.oz. 8
Syrupy glucose.....	fl.oz. 6
Caramel.....	sufficient to color

Root Beer.

- I.

Fluid extract sarsaparilla.....	fl.dr. 10
Fluid extract of pipsissewa.....	fl.dr. 10
Fluid extract of wintergreen.....	fl.dr. 4
Fluid extract of licorice.....	fl.dr. 4
Oil of wintergreen.....	drops 48
Oil of sassafras.....	drops 24
Oil of cloves.....	drops 12
Alcohol.....	fl.oz. 10

This makes a root beer "extract" which may be mixed with syrup, or it may be diluted with 9 gallons of water containing 1 gallon of refined molasses, and charged in a fountain. If it is preferred to use a fermented article, add the water and molasses, using warm water, also 1 quart yeast, and keep in a warm place until fermentation is complete.

II.

Sassafras.....	av.oz. 4
Yellow dock.....	av.oz. 4
Pimento.....	av.oz. 4
Wintergreen.....	av.oz. 4
Wild cherry bark.....	av.oz. 2
Coriander seed.....	av.oz. 2
Hops.....	av.oz. 1

Reduce to powder and percolate with a menstruum composed of 3 volumes of alcohol and 5 volumes of water until 48 fluid-ounces of liquid have passed. Of this half-strength fluid extract 2 fluidounces are sufficient to make 1 gallon of root beer. Or, exhaust the above drugs with the menstruum indicated, add enough water to make 6 gallons, and start fermentation with 1 pint of yeast.

III.

Sarsaparilla.....	av.oz. 1½
Sassafras.....	av.oz. 2½
Wild cherry bark.....	av.oz. 2½
Wintergreen bark.....	av.oz. 2½

Mix with 5 gallons of lukewarm water, add 4 fluidounces of molasses and 2½ fluid-ounces of fresh yeast, and allow fermentation to proceed, then draw off and bottle.

IV. In a suitable vessel place 300 grains each of pipsissewa, dandelion, sassafras, American sarsaparilla, Jamaica ginger, and hops; add 3 gallons of boiling water and keep covered and hot, but not boiling, for 8 hours; cool partially; strain through a cloth and add 5 pounds of white or coffee sugar (or 5 pints of molasses or syrup) to the colature. When dissolved transfer to a large jar and make up to 5 gallons with water. Add one-half pint fresh brewer's yeast (or sufficient compressed yeast), stir, allow to remain in a moderately warm place, and in from 24 to 72 hours it will be fit for use. The beaten white of 1 egg or a little isinglass is often employed for clarification.

Soda Foam. (Gum Foam.)

By the title "soda foam," or the more improper term "gum foam," is meant a liquid to be added to syrups, so that when mixed with carbonated ("soda") water, a certain proportion of gas will be retained in the mixture in the desirable form of foam. Different substances are used in these "foams," and these vary in their gas-retaining or foam-holding qualities. Among the more common substances used in "foams" are gelatin, white of egg, and quillaja tincture.

If gelatin be used, it must be dissolved in the water used in making plain syrup. About one-half av.ounce will be sufficient for 1 gallon of syrup.

In using albumen, the white of 1 egg should be added to 16 fluidounces of water, stirring well, and straining. Or one-half of the water may be replaced by simple syrup. This mixture decomposes very quickly, and should be preserved on ice, or, better yet, it should be prepared only as required.

Quillaja may be used in the form of a tincture which may be prepared as follows:

Quillaja, fine chips.....	av.oz. 4
Alcohol.....	fl.oz. 8
Water.....	sufficient

Mix the drug with 16 fluidounces of water, boil for 15 minutes, strain, and add enough water through the strainer to make the colature measure 16 fluidounces. Mix the liquid, when cool, with the alcohol, let stand for 12 hours, filter, and to the filtrate add enough water to make it measure 24 fluidounces.

If a cheaper preparation is desired, the alcohol may be replaced by water. The product, which is just as efficient, as a "soda foam" as the preceding, may be preserved by the addition of a small amount of salicylic acid.

One fluidounce of this preparation is required as a "foam" for 1 gallon of syrup.

Solution of Acid Phosphates.

I.	
Bone ash, powder.....	av.oz. 8
Sulphuric acid, concentrated.....	av.oz. 8
Water.....	sufficient

Mix the bone ash with 8 fluidounces of water, add the acid previously diluted with

16 fluidounces of water, mix thoroughly with a porcelain or glass stirrer, add enough water to make the whole weigh 32 av.ounces, and set the mixture aside for 24 hours, agitating occasionally. Then transfer the mixture to a strong muslin strainer, and subject this to pressure, avoiding contact with metals, so as to express as much liquid as possible. Lastly, filter the liquid through paper.

The acid used in this preparation may be the commercial variety, provided it is free from arsenic, and of a specific gravity not less than 1.88.—N. F.

II.

Calcium carbonate, precipitated.....	gr. 369
Magnesia, calcined.....	gr. 116
Potassium carbonate.....	gr. 151
Phosphoric acid, U. S. P., or	
85 per cent.....	fl.oz. 3½
Water, enough to make.....	fl.oz. 16

Mix the acid with 8 fluidounces of water, add the calcium carbonate gradually with constant stirring. When effervescence has ceased, add the magnesia in the same way, and then the potassium carbonate. Finally add the rest of the water, stir well and filter.

Solution of Citric Acid. (Fruit Acid.)**I.**

Citric acid.....	av.oz. 8
Water, enough to make.....	fl.oz. 16
Dissolve and filter.	

II.

Citric acid.....	av.oz. 8
Alcohol.....	fl.oz. 2
Water, enough to make.....	fl.oz. 16
Dissolve and filter.	

Spirit of Nutmeg.

Oil of nutmeg.....	fl.dr. 4
Alcohol.....	fl.oz. 9½

Syrup.

Simple or plain syrup for soda fountain use, or "soda syrup" as it is frequently called, is made of different strengths depending upon the peculiar ideas or notions of the pharmacists. Some use 10 av.pounds to 1 gallon of water, others again use the regular simple syrup of the pharmacopœia, but the most common formula in vogue is the following:

Sugar.....	av.lbs. 12
Water.....	gal. 1

Of course, only the purest granulated sugar should be used. It may be dissolved in the

water by means of heat or by the process of percolation which is now so largely employed in making medicinal syrups.

If the heat process be preferred, the water and sugar should positively not be mixed before applying heat, as scorching of the sugar may occur, thus imparting to the product a certain disagreeable taste which is highly objectionable to a discriminating and delicate palate.

The percolation process should be preferred for making this preparation, as it is much more cleanly, it is constant, and requires but little supervision. Any amount may be made by having a large percolator or several percolators, which may be replenished with sugar and water as required. These percolators should be mounted in a substantial rack; a convenient receptacle for the syrup for ordinary drug store use is a clean glycerin can.

In a few instances it may be found that the density of the above syrup is too low; the U. S. P. syrup must then be used.

Syrup, Ambrosia.

Port wine.....	fl.oz. 16
Lemon syrup.....	fl.oz. 16
Raspberry syrup.....	fl.oz. 32
Soda foam.....	sufficient

Syrup, Birch.

Birch essence.....	fl.oz. 2
Oil of sassafras.....	drops 2
Syrup, enough to make.....	fl.oz. 64
Soda foam.....	sufficient

Syrup, Catawba.

Simple syrup, U. S. P.....	fl.oz. 16
Catawba wine.....	fl.oz. 16
Soda foam.....	sufficient

Syrup, Cherry.

Cherry juice.....	pint 1
Syrup.....	pints 7
Fruit acid.....	fl.dr. 4
Soda foam.....	sufficient

Syrup, Wild Cherry.

Wild cherry bark.....	av.oz. 1
Glycerin.....	fl.oz. 1
Sugar.....	av.oz. 6
Water.....	sufficient

Reduce the wild cherry bark to No. 20 powder. Mix the glycerin with 4 fluidounces of water and moisten the powder with sufficient of the liquid, macerate for 24

hours in a close vessel, then percolate and pour on water until the percolate measures 12 fluidounces, add the sugar and when dissolved strain, add half fluidounce of fruit acid and sufficient water to make 1 pint. This can be dispensed as cherry phosphate, by making an addition of solution of acid phosphate when it is drawn.

Syrup, Chocolate.

I.

Cacao, powder.....	av.oz. 2
Water.....	fl.oz. 32
Sugar.....	av.oz. 52
Extract of vanilla.....	fl.dr. 4

Triturate the cacao in a mortar with a portion of the water to a smooth paste, add the remainder of the water, then the sugar, heat the whole in a suitable vessel with constant stirring until it nearly reaches the boiling point, then strain through a fine sieve, and when cold, add the vanilla extract.

II.

Chocolate powder.....	av.oz. 4
Sugar.....	av.oz. 52
Extract of vanilla.....	fl.dr. 6
Water, boiling.....	fl.oz. 24

Mix the chocolate and sugar, triturate the mixed powders with the boiling water added slowly and strain; when cool, add the vanilla extract.

Syrup, Coffee.

I.

Mocha coffee.....	av.oz. 2
Java coffee.....	av.oz. 2
Sugar.....	av.oz. 60
Soda foam,	
Water.....	of each, sufficient

The coffee should be fresh roasted, of the very best quality, and be ground to fine powder. Heat it in a vessel with 16 fluidounces of water to boiling, and boil for 1 minute, set the mixture aside for several minutes, then filter through a double filter, and add gradually hot or nearly boiling water, until the filtrate measures 32 fluidounces. In this filtrate dissolve the sugar by percolation.

II.

Mocha coffee.....	av.oz. 2
Java coffee.....	av.oz. 6
Sugar.....	av.oz. 56
Water, enough to make.....	fl.oz. 64
Soda foam.....	sufficient

Mix the previously roasted and finely ground coffee, add 32 fluidounces of water,

macerate in a suitable vessel, a wide-mouth bottle, for example, over night; then, covering the vessel loosely, place in another vessel of water, heat for 2 hours, strain, let stand about 2 hours, pour off clear liquid through muslin strainer, avoiding any of the precipitate, or the liquid may be filtered. Through the filtrate add enough water to make the filtrate measure 32 fluidounces. In the filtrate dissolve the sugar by agitation or percolation, and add the foam.

III.

Mocha coffee.....av.oz. 4
Glycerin.....fl.oz. 1
Soda foam,
Water, boiling of each, sufficient
Sugar.....av.oz. 52

Mix the glycerin with the ground coffee, allow to stand for 1 or 2 hours, pack in a percolator, and pour on the water until 32 fluidounces of liquid are obtained. In this dissolve the sugar by percolation.

IV.

Coffee, roasted and reduced to
fine powder.....av.oz. 7
Distilled water, hot.....fl.oz. 8
Brandy.....fl.oz. 2
Simple syrup, U. S. P., boiling
hot.....fl.oz. 20
Soda foam.....sufficient

Mix the ingredients, cover well and set aside in moderately warm, not hot, place for about 15 minutes. Then allow to stand for 24 hours at the ordinary temperature, and filter.—D.

Syrup, Cream.

I.

Cream, fresh.....fl.oz. 16
Sodium carbonate.....gr. 60
Sugar.....av.oz. 16

Mix and dissolve by frequent stirring with a glass rod.

II.

Cream, fresh.....fl.oz. 16
Milk, fresh.....fl.oz. 16
Sugar.....av.oz. 82

Dissolve by shaking. Keep in a cool place. The addition of 60 grains of sodium bicarbonate will retard souring.

Syrup, Egg Cream.

Cream.....fl.oz. 16
Syrup.....fl.oz. 48
Extract of vanilla.....fl.dr. 4
Yolks of 16 eggs.

Rub cream with egg-yolk until perfectly smooth, then add the syrup and flavoring. This is to be served like any other soda syrup, but before handing over, sprinkle a little mixed spice on the foam.

Syrup, Ginger.

I.

Tincture of ginger.....fl.oz. 2
Syrup.....fl.oz. 64
Soda foam.....sufficient

When greater pungency is desired, 1 fluid-dram of tincture of capsicum may be added. For the ordinary tincture of ginger, the soluble essence of ginger may be substituted.

II.

Soluble essence of ginger.....fl.oz. 1
Tincture of capsicum.....fl.dr. 2
Syrup.....fl.oz. 64
Soda foam.....sufficient

For many people ginger is scarcely warm enough without the addition of capsicum.

Syrup, Kola Coca.

Wine of kola.....fl.oz. 4
Wine of coca.....fl.oz. 4
Syrup.....fl.oz. 48
Soda foam.....sufficient

Color with caramel and cochineal solution.

Syrup, Lemon.

I.

Solution of citric acid.....fl.oz. 1
Spirit of lemon.....fl.dr. 4
Syrup.....fl.oz. 64
Soda foam.....sufficient

II.

Citric acid.....gr. 180
Spirit of lemon.....fl.dr. 1½
Water.....fl.oz. 6
Syrup, enough to make.....fl.oz. 64
Soda foam.....sufficient

Dissolve the acid in the water and add the spirit, syrup and foam.

III.

Oil of lemon.....drops 12
Citric acid.....gr. 800
Syrup.....fl.oz. 64
Soda foam.....sufficient

Rub oil with acid and a little syrup, add remainder of syrup, and dissolve, and add the foam.

IV. Grate rind from 3 lemons, rub with 6 av. ounces granulated sugar, add 8 fluidounces of water, macerate a short time, stir fre-

quently, strain, express lemons, mix juice with other liquid, add one-half gallon of simple syrup, U. S. P., and finally sufficient soda foam.

Syrup, Maple.

Maple sugar.....	av. lbs. 8
Water.....	pints 4
Fruit acid.....	fl. oz. 1
Extract of vanilla.....	fl. oz. 2
Soda foam.....	sufficient

Dissolve the sugar in the water with gentle heat, strain and add the vanilla and foam.

Syrup, Malto.

Extract of malt, thick.....	fl. oz. 4
Solution of acid phosphate.....	fl. oz. 4
Syrup, enough to make.....	fl. oz. 64

Syrup, Mead.

I.

Pineapple syrup.....	fl. oz. 2
Soluble essence of ginger.....	fl. dr. 4
Sarsaparilla essence.....	drops 15
Spirit of nutmeg.....	fl. dr. 1
Honey or malt extract.....	fl. oz. 2
Syrup, enough to make.....	fl. oz. 64
Caramel.....	sufficient to color

II.

Sarsaparilla root.....	av. oz. 1½
Licorice root.....	av. oz. 2
Marshmallow root.....	av. oz. 1
Gum arabic.....	av. oz. 2

Make a decoction with water, strain to 6 pints; add:

Sugar.....	av. lbs. 10
When cold, add:	
Oil of lemon.....	drops 80
Oil of wintergreen.....	drops 80
Oil of cinnamon.....	drops 10
Oil of sassafras.....	drops 15

III.

Essence of mead.....	fl. oz. ¼
Honey.....	av. oz. 20
Syrup.....	fl. oz. 32
Water.....	sufficient to make 4 pints

Syrup, Moxie.

I.

Oil of sassafras.....	drops 12
Oil of wintergreen.....	drops 12
Alcohol.....	fl. dr. 6
Fluid extract of gentian.....	fl. dr. 6
Compound syrup of sarsaparilla.....	fl. oz. 6
Caramel.....	fl. oz. 1
Syrup, enough to make.....	fl. oz. 64

II.

Compound tincture of gentian.....	fl. oz. 1
Sarsaparilla essence.....	fl. dr. 4
Syrup.....	fl. oz. 32
Syrupy glucose.....	fl. oz. 32
Caramel.....	sufficient to color

Syrup, Nectar.

I.

Raspberry syrup.....	fl. oz. 4
Pineapple syrup.....	fl. oz. 2
Vanilla syrup.....	fl. oz. 1
Syrup.....	fl. oz. 2
Soda foam.....	sufficient

II.

Spirit of nutmeg.....	fl. dr. 4
Spirit of lemon.....	fl. dr. 4
Extract of vanilla.....	fl. dr. 4
Water.....	fl. oz. 8
Simple syrup, U. S. P.....	fl. oz. 56
Soda foam.....	sufficient

Add coloring if thought desirable.

III.

Strawberry syrup.....	fl. oz. 32
Simple syrup, U. S. P.....	fl. oz. 32
Madeira wine.....	fl. oz. 4
Spirit of bitter almonds.....	fl. dr. 1
Citric acid.....	av. oz. ¼
Soda foam.....	sufficient

Syrup, Orange.

I.

Oil of orange (fresh).....	drops 10
Solution of citric acid.....	fl. dr. 4
Syrup.....	fl. oz. 64
Soda foam.....	sufficient

II.

Oil of orange.....	drops 15
Tartaric acid.....	gr. 120
Syrup.....	fl. oz. 64
Soda foam.....	sufficient

Rub oil with acid and small portion of syrup, add remainder of syrup; dissolve, add the foam and strain.

Take 6 good oranges and rub the oil from the rind by means of cut, loaf sugar. Then express the juice of the oranges and add to about 4 or 5 pints of syrup. The sugar used to extract the oil should be added to the syrup and the whole heated gently to dissolve the sugar; then strain. If desired for blood orange, color with raspberry juice or tincture of cudbear. Now add syrup to make 1 gallon. In case the oranges are unusually sweet acidify with citric acid. Finally add sufficient soda foam.

Syrup, Orgeat.

- I.
- | | | |
|--------------------------|--------|----|
| Sweet almonds..... | av.oz. | 8 |
| Bitter almonds..... | av.oz. | 2½ |
| Sugar..... | av.oz. | 48 |
| Water..... | fl.oz. | 26 |
| Orange flower water..... | fl.oz. | 4 |

Blanch the almonds, rub them in a mortar to fine paste with 12 av.ounces of the sugar and 2 fluidounces of the water. Mix the paste with the remainder of the water, strain with strong expression, add the remainder of the sugar, and dissolve it with the aid of a gentle heat. Lastly, add the orange flower water and strain the syrup again.

- II.
- | | | |
|----------------------------|--------|----|
| Cream syrup..... | fl.oz. | 8 |
| Vanilla syrup..... | fl.oz. | 16 |
| Simple syrup..... | fl.oz. | 8 |
| Oil of bitter almonds..... | drops | 5 |

Syrup, Pineapple.

I. Concentrated syrup:

Take 1 pineapple, cut it into thin slices, spread these in layers in a wide shallow vessel and sprinkle sugar over them, a layer of sugar for each layer of fruit; let stand 24 hours, pour off the liquid and set aside. Wash the pieces with 2 pints of water and express. To the expressed liquid add 4 av. pounds of granulated sugar, and apply a gentle heat until dissolved. When nearly dissolved, add the juice first obtained and simmer, strain, and keep in well-corked bottles.

- II.
- | | | |
|-----------------------------------|--------|------------|
| Concentrated pineapple syrup..... | fl.oz. | 4 |
| Syrup..... | fl.oz. | 32 |
| Soda foam..... | | sufficient |

This is the diluted syrup for fountain use.

Syrup, Raspberry.

Make from fresh ripe raspberries as directed for strawberry syrup, or make from concentrated fruit juices of the market.

- | | | |
|----------------------|--------|------------|
| Raspberry juice..... | pint | 1 |
| Syrup..... | pints | 7 |
| Mix and add | | |
| Fruit acid..... | fl.dr. | 4 |
| Soda foam..... | | sufficient |

Syrup, Sarsaparilla.

- I.
- | | | |
|------------------------------|--------|---------------------|
| Essence of sarsaparilla..... | fl.dr. | 4 |
| Syrup..... | fl.oz. | 64 |
| Caramel, | | |
| Soda foam,..... | | of each, sufficient |

II.

- | | | |
|------------------------------------|--------|----|
| Fluid extract of sarsaparilla..... | fl.oz. | 1 |
| Fluid extract of licorice..... | fl.dr. | 4 |
| Oil of wintergreen..... | drops | 10 |
| Oil of sassafras..... | drops | 6 |
| Water..... | fl.oz. | 8 |
| Simple syrup, U. S. P., enough | | |
| to make..... | fl.oz. | 64 |

III.

- | | | |
|---|--------|---------------------|
| Sarsaparilla essence..... | fl.dr. | 4 |
| Compound fluid extract of sarsaparilla (for syrup)..... | fl.dr. | 4 |
| Syrup..... | fl.oz. | 64 |
| Caramel..... | | sufficient to color |

Syrup, Sherbet.

I.

- | | | |
|----------------------|--------|------------|
| White wine..... | fl.oz. | 16 |
| Lemon syrup..... | fl.oz. | 16 |
| Pineapple syrup..... | fl.oz. | 32 |
| Soda foam..... | | sufficient |

II.

- | | | |
|----------------------|--------|------------|
| Vanilla syrup..... | fl.oz. | 48 |
| Pineapple syrup..... | fl.oz. | 16 |
| Lemon syrup..... | fl.oz. | 16 |
| Soda foam..... | | sufficient |

Syrup, Strawberry.

- | | | |
|-------------------------------|---------|----|
| Fresh, ripe strawberries..... | quarts | 5 |
| Sugar..... | av.lbs. | 12 |
| Water..... | pints | 1 |

Spread a portion of the sugar over the berries, arranging sugar and berries in layers, let stand for several hours, express the juice, and strain, washing out the mark with water. Add the remainder of the sugar and water, raise to the boiling point and strain; bottle while hot and cork well. When wanted for use, mix with an equal volume of simple syrup. Add fruit acid, and soda foam sufficient.

Syrup, Tea.

- | | | |
|-----------------------|--------|---------------------|
| Orange Pekoe tea..... | av.oz. | 1½ |
| Sugar..... | av.oz. | 28 |
| Water, | | |
| Soda foam..... | | of each, sufficient |

Heat 22 fluidounces of water to boiling, remove vessel from source of heat, add the tea leaves to the water, cover the vessel, and allow leaves to infuse not to exceed one or two minutes; pour the liquid off into a filter, and if the filtrate does not measure 16 fluidounces, pour sufficient cold water on the leaves, stir about for a moment, and decant into filter until filtrate measures 1 pint; in this filtrate dissolve the sugar by agitation

or percolation, and to the solution add the foam.

Syrup, Vanilla.

This is prepared by adding enough extract of vanilla to impart the desired flavor, coloring the mixture with caramel, and adding 1 fluidounce of soda foam to each gallon of syrup. Some use cream syrup instead of plain syrup.

Syrup of Violets.

A so-called syrup of violets may be made by adding a little strong tincture of orris root to water, rendering clear or nearly so, by filtration through magnesium carbonate, and dissolving in the flavored water enough sugar to make a syrup. Tincture of grass may be used as a coloring, if a green tint is desired; but green frequently suggests poison to the lay mind.

Syrup Walnut or Hickory-Nut Cream.

Take 1 pound of walnut or hickory nut kernels and by blanching remove skin which, if left on, would impart an unpleasant bitter taste; then rub to powder in a wedgewood or porcelain mortar, adding a few drops of lemon juice to prevent separation of oil in kernels; then add water gradually so as to make a thick emulsion. When the emulsion is formed, the whole should be transferred to a cloth and be expressed; the residue should be returned to the mortar and treated as before, pulverizing, triturating again with water, and expressing, repeating this process until all of the nut passes through, occasionally adding a little more lemon juice to the residue. The result of this process, which should measure about 32 fluidounces, should be added to $\frac{1}{2}$ gallon of cream syrup. Extract of lemon, vanilla, or other flavoring may be added and possibly some kind of coloring. This syrup is to be served like other soda water syrups.

Tonic, Calisaya.

I. Cinchona bark	.....gr.	120
Gentian root	.....av.oz.	$\frac{3}{4}$
Orange peel	.....av.oz.	3
Cochineal	.....gr.	60
Caraway seed	.....gr.	30
Diluted alcohol	.....	sufficient
Quinine sulphate	.....gr.	8
Oil of rose	.....drop	1
Simple syrup, enough to make	.....gal.	1

Mix the calisaya, gentian, orange peel, cochineal and caraway, reduce to coarse powder, and extract by percolation by means of diluted alcohol so as to obtain 16 fluidounces of percolate; to this add the remaining ingredients.

In dispensing as a carbonated beverage it is best to draw "flat," without foam.

II.

Red cinchona	.....av.oz.	4
Gentian	.....av.oz.	1
Orange peel	.....av.oz.	$1\frac{1}{2}$
Cinnamon	.....av.oz.	1
Water,		
Alcohol	.....of each,	sufficient
Simple syrup, U. S. P.	.....fl.oz.	64

Mix the drugs, reduce to coarse powder, and extract by percolation so as to obtain 32 fluidounces of percolate, using a menstruum consisting of 1 volume of water and 2 of alcohol. To this percolate should be added the syrup.

Tonic, Java.

Compound tincture of cinchona	.....fl.dr.	6
Coffee syrup	.....fl.oz.	8
Vanilla syrup	.....fl.oz.	4
Syrupy glucose	.....fl.oz.	8
Syrup, enough to make	.....fl.oz.	32

Vinegar, Raspberry.

Acetic acid	.....fl.dr.	4
Raspberry syrup	.....fl.oz.	8
Syrup	.....fl.oz.	8

Water, Congress.

Potassium bicarbonate	.....av.oz.	$\frac{3}{4}$
Sodium bicarbonate	.....av.oz.	$5\frac{1}{2}$
Magnesium sulphate	.....av.oz.	$3\frac{3}{4}$
Sodium chloride (pure)	.....av.oz.	$2\frac{3}{4}$
Calcium chloride (anhydrous)	.....av.oz.	$3\frac{1}{2}$
Water	.....	sufficient

Dissolve the calcium chloride and magnesium sulphate each in 12 fluidounces of water, mix the solutions and after 10 or 15 minutes strain the liquid through muslin with thorough pressure.

Powder the potassium bicarbonate in a mortar, add the sodium chloride and bicarbonate; mix the whole with 16 fluidounces of water, pass the magma through a No. 50 hair sieve, following it with another 16 fluidounces of water, then with the calcium and magnesium solution first obtained, and finally with more water, until the united liquids measure 4 pints. Shake the mixture, place in a 10-gal-

lon fountain, fill the latter with water, and charge the whole in the usual way with carbonic acid gas.

Inasmuch as the mixture of magnesium sulphate and calcium chloride has for its object the formation of some magnesium chloride, the following solution may be substituted instead:

Calcium chloride (anhydrous).....	av.oz. 2
Magnesium chloride (anhydrous).....	av.oz. 1
Water.....	f.oz. 16

Dissolve and mix the sodium chloride and bicarbonate and potassium bicarbonate as before.

Water, Friedrichshall.

Sodium bicarbonate.....	gr. 384
Sodium sulphate, crystal.....	av.oz. 1½
Potassium sulphate.....	gr. 165
Magnesium sulphate.....	av.oz. 20
Sodium chloride (pure).....	av.oz. 10½
Calcium chloride (anhydrous).....	av.oz. 1
Water.....	sufficient

Triturate the potassium and sodium sulphates in a mortar, add the magnesium sulphate and then 3 pints of water, and stir until dissolved; now add the sodium chloride and bicarbonate, continue the stirring for a few minutes, pour the mixture on a No. 50 hair sieve, add the calcium chloride, previously dissolved in 8 fluidounces of water, and then enough water to make the whole measure 4 pints. Put this into the usual 10-gallon fountain, fill the latter with water, and charge with carbonic acid gas to moderate pressure only.

Water, Hunyadi Jauos.

The following makes an excellent imitation:

Potassium sulphate.....	gr. 6
Calcium sulphate.....	gr. 60
Sodium sulphate.....	av.oz. 3½
Magnesium sulphate.....	av.oz. 4½
Water, enough to make.....	gal. 1

Mix, dissolve and filter.

Water, Kissingen (Bakoczy).

Potassium bicarbonate.....	gr. 272
Sodium bicarbonate.....	av.oz. 2¾
Magnesium sulphate.....	av.oz. 3¾
Sodium chloride, pure.....	av.oz. 8½
Calcium chloride (anhydrous).....	av.oz. 2¾
Water.....	sufficient

Pulverize the potassium bicarbonate in a

mortar, add the sodium bicarbonate and magnesium sulphate, and triturate the mixture with 1 pint of water, until the potassium and magnesium salts are dissolved. Pass the magma through a No. 50 hair sieve, washing what may remain on the sieve through with another pint of water.

Next rub the sodium chloride with 24 fluidounces of water until nearly dissolved and pass this liquid through the sieve.

Finally dissolve the calcium chloride in a few fluidounces of water, pass it through the sieve, and add a little more water to dissolve all the salt, using enough water to make the combined liquids measure 4 pints. Shake the whole well and place in the usual 10-gallon fountain, fill the latter with water, and charge with carbonic acid in the usual manner.

Water, Selters (Seltzer).

Sodium bicarbonate.....	av.oz. 3 gr. 384
Sodium chloride (pure).....	av.oz. 2 gr. 384
Calcium chloride (anhydrous).....	gr. 490
Magnesium sulphate.....	av.oz. 1 gr. 165
Water.....	sufficient

Dissolve the calcium chloride and magnesium sulphate each in 4 fluidounces of water, mix the solution, let stand for 10 or 15 minutes, and strain through muslin with pressure.

Mix the sodium chloride and bicarbonate with a pint of water, pass the mixture through a No. 50 hair sieve, follow with the preceding liquid and then with enough water to make the liquid measure 4 pints. Shake the whole well, pour into the usual 10-gallon fountain, fill the latter with water, and charge in the usual way with carbonic acid.

The first mixture is for the purpose of forming some magnesium chloride, and hence the following solution may be used instead:

Calcium chloride (anhydrous).....	av.oz. ½
Magnesium chloride (anhydrous).....	av.oz. ½
Water.....	f.oz. 8

Add this to the sodium chloride and bicarbonate as before.

Water, Pyrmont.

Calcium chloride (anhydrous).....	av.oz. 2½
Sodium carbonate.....	av.oz. 3½
Sodium sulphate.....	av.oz. 8 gr. 55
Magnesium sulphate.....	av.oz. 1 gr. 384
Ferrous sulphate.....	gr. 82
Water.....	sufficient

Dissolve the calcium chloride in 8 fluid-ounces of water, and the sodium sulphate and carbonate together in 1 pint of water by aid of heat; filter the latter solution, and while yet hot, add to it the calcium chloride solution. After 10 or 15 minutes, the precipitate will have contracted to a heavy mass at the bottom of the vessel. The supernatant liquid should then be decanted without losing any of the precipitate. To the latter, add the magnesium sulphate, shake thoroughly and rinse into a 10-gallon fountain nearly filled with water. Charge with carbonic acid gas to a pressure of 20 pounds, re-open the fountain, throw in the ferrous sulphate, coarsely powdered, close again, and charge to the usual pressure.

The object of charging lightly first before introducing the iron salt is to prevent oxidation of the latter subsequent to its introduction into the fountain.

Water, Vichy (Grand Grille).

Potassium bicarbonate	gr. 272
Sodium bicarbonate	av.oz. 10
Sodium phosphate, crystal	gr. 220
Magnesium sulphate	gr. 490
Sodium chloride (pure)	gr. 110
Calcium chloride (anhydrous)	gr. 272
Water	sufficient

Triturate sodium phosphate with the potassium bicarbonate, add the sodium chloride, magnesium sulphate, and sodium bicarbonate, stir the mixture with 2 pints of water, pass the magma through a No. 50 hair sieve, rubbing through if necessary with the aid of a little more water.

Dissolve the calcium chloride in 4 fluid-ounces of water, add it to the other solution, and add enough water if necessary, to make the whole measure 4 pints. Shake the whole well together, pour into a 10 gallon fountain, fill the latter with water, and charge with carbonic acid gas in the usual way.

PART VII.

MISCELLANEOUS PREPARATIONS.....	374-468

Alcohol Dilution Table.

To make the below-mentioned strengths of alcohol, ordinary alcohol should be mixed with water, as follows:

85 p.c. alcohol	—17 vol. of alcohol	+2 of water.
80 p.c. alcohol	—16 vol. of alcohol	+3 of water.
75 p.c. alcohol	—15 vol. of alcohol	+4 of water.
70 p.c. alcohol	—14 vol. of alcohol	+5 of water.
65 p.c. alcohol	—13 vol. of alcohol	+6 of water.
60 p.c. alcohol	—12 vol. of alcohol	+7 of water.
55 p.c. alcohol	—11 vol. of alcohol	+8 of water.
50 p.c. alcohol	—10 vol. of alcohol	+9 of water.
45 p.c. alcohol	—9 vol. of alcohol	+10 of water.
40 p.c. alcohol	—8 vol. of alcohol	+11 of water.
35 p.c. alcohol	—7 vol. of alcohol	+12 of water.
30 p.c. alcohol	—6 vol. of alcohol	+13 of water.
25 p.c. alcohol	—5 vol. of alcohol	+14 of water.
20 p.c. alcohol	—4 vol. of alcohol	+15 of water.
15 p.c. alcohol	—3 vol. of alcohol	+16 of water.
10 p.c. alcohol	—2 vol. of alcohol	+17 of water.
5 p.c. alcohol	—1 vol. of alcohol	+18 of water.

Alloys of Low Melting Point.

I. Newton's metal:

Bismuth	.....	parts 8
Lead	.....	parts 5
Tin	.....	parts 3

This mixture melts at 95 degs. C.

II. Rose's metal:

Bismuth	.....	parts 2
Lead	.....	part 1
Tin	.....	part 1

This mixture liquefies at 94 degs. C.

III. Wood's metal:

Bismuth	.....	parts 15
Lead	.....	parts 8
Tin	.....	parts 4
Cadmium	.....	parts 3

This mixture melts at 68 degs. C.

Ammonia, Domestic or Household.

I.

Borax	.....	gr. 120
Oil of cinnamon	.....	drop 1
Oil of cloves	.....	drop 1
Oil of citronella	.....	drop 1
Alcohol	.....	fl.dr. 1
Ammonia water	.....	fl.oz. 32

Dissolve the borax in the ammonia and the oils in the alcohol, and mix the two solutions.

II.

Sodium carbonate	.....	av.oz. 20
Water of ammonia	.....	fl.oz. 48
Water	.....	fl.oz. 32

These are mixed and the clear solution is decanted after 2 or 3 days.

Axle Greases.

I.

Plumbago, very fine powder	.....	av.oz. 4
Lard	.....	av.oz. 12

Mix well.

II.

Plumbago, very fine powder	.....	av.oz. 4
Suet	.....	av.oz. 12

Mix well.

III.

Plumbago, very fine powder	.....	av.oz. 6
Petrolatum	.....	av.oz. 10

Mix well.

IV.

Caustic soda	.....	av.oz. 4
Water	.....	fl.oz. 16
Palm oil	.....	av.oz. 8
Tallow	.....	av.oz. 8

Dissolve the soda in the water, add the fats, and heat until a homogeneous mixture is produced.

V. An excellent lubricant is produced by filtering crude petroleum through animal charcoal (bone black).

VI. Heat together 10 pounds of rosin oil, and 8 pounds of lime, slaked and afterward sifted fine. Stir the mixture constantly while heating, and continue the heating until the mixture is uniform and of the consistency of syrup. The resulting mixture is called rosin soap. Take 1 pound of this and 1 pound of palm oil, melt together, then stir in 50 pounds of rosin oil, and sufficient rosin soap to make the mixture of the consistency of butter. Lastly, add $\frac{3}{4}$ pound of caustic soda, heat and stir until thoroughly combined.

Axle Grease Stains, Removal of.

See "Stains, Removal of."

Barometer or Hygrometer Paper.

Cobalt chloride.....	av.oz.	4
Sodium chloride.....	av.oz.	2
Acacia.....	av.oz.	1
Calcium chloride.....	gr. 175 to 850	
Water.....	fl.oz.	12

Mix, dissolve and filter. In very dry regions, a larger amount of calcium chloride must be employed than in moister regions. Glycerin may be substituted for the calcium chloride, but the latter is to be preferred.

To prepare the paper, soak white blotting paper in this liquid and then dry.

The amount of moisture in the air is indicated by the following colors:

Rose red.....	rain
Pale red.....	very moist
Bluish red ..	moist
Lavender blue.....	nearly dry
Blue.....	very dry

Batteries, Filling for Dry.

Charcoal.....	av.oz.	8
Mineral carbon or graphite.....	av.oz.	1
Manganese peroxide.....	av.oz.	8
Calcium hydrate.....	av.oz.	1
Arsenic (oxide).....	av.oz.	1
Glucose, mixed with dextrin or starch.....	av.oz.	1

These are intimately mixed dry, and then worked into a paste of proper consistence with a fluid composed of equal parts of a saturated solution of chloride of ammonium and chloride of sodium in water, to which are added one-tenth volume of a solution of bichloride of mercury and an equal volume of hydrochloric acid. The fluid is added gradually and the mass well worked up.

Battery, Fluid.**I. For bichromate batteries:**

Mercury bisulphate.....	gr.	120
Potassium bichromate.....	av.oz.	2½
Sulphuric acid, crude.....	fl.oz.	8
Water.....	fl.oz.	16

In the water dissolve first the mercury salt and then the bichromate; then add the sulphuric acid very carefully, stirring constantly with a glass rod. When cool the solution is ready for use. The mercury keeps the zincs well amalgamated.

Sometimes the mercury salt is omitted, and frequently sodium bichromate is substituted for the potassium bichromate.

II.

Potassium bichromate.....	av.oz.	3
Sulphuric acid.....	fl.oz.	2
Water.....	fl.oz.	16

Mix and dissolve.

III. For Leclanche batteries.

Ammonium chloride.....	av.oz.	5
Water, enough to make.....	fl.oz.	16

Mix and dissolve.—N. F.

III. For gravity batteries:

Use a saturated solution of copper sulphate in water.

Battery, Storage.

A very satisfactory storage battery may be constructed in the following manner: After procuring two half-round porous cups and a glass jar sufficiently large to hold them both, get two pieces of sheet lead one-sixteenth of an inch thick, wide enough to fit the half-round side of the porous cups, and deep enough to come an inch above the top edge of the cups and jar. Solder a screw post to each lead plate, nearly fill the cup with a paste consisting of red lead and a solution of sodium sulphate thin enough to run like a cement, and put the lead plates in place, one of them being marked with an +. Fill the outer jar to within half an inch from the top with a 1:8 solution of sulphuric acid, and the battery is ready for charging. This may be done by attaching for 24 hours to a 12-cell copper sulphate battery, or to a dynamo; but always charge in the same direction. If well charged these storage cells will retain a large volume of electricity for a considerable time, and with a battery consisting of two or more cells small motors, lamps and induction coils may be operated. After the first charge a 5-cell battery suffices to recharge.

Baume's Scale.

To convert Baume's degrees to specific gravity, the following may be employed:

I.

For liquids lighter than water, add the degree Baume to 130 and divide the sum into 140, viz.: $45^{\circ} = 140 + (130 + 45) = 140 \div 175 = 0.80$ sp. gr.

II.

For liquids heavier than water, subtract the degree Baume from 145 and divide into 145, viz.: $29^{\circ} B = 145 + (145 - 29) = 145 \div 116 = 1.25$ sp. gr.

Bedbug Exterminators.

The number of "cures" for bedbugs is legion. The following list embraces some of the substances employed for their destruction: Oil of turpentine, kerosene, benzin, mercuric chloride, mercury, paris green, zinc chloride, arsenic, insect powder, Scotch snuff, capsicum, naphthalin, camphor, sulphur fumes, ammonia vapor, soft soap, carbolic acid (both pure and crude), colocynth, wormwood, aloes, pepper, sodium borosalcylate, cimicifuga root; also fresh sprays of strongly-scented plants, such as ledum palustre, pennyroyal, tansy, pine, etc., placed beneath the mattress.

Bedbug exterminators may be in the powder, the liquid or the paste form. The powder may be the well known insect powder, or it may be paris green, or it may be a mixture of different insecticides. Sometimes these powders are made into a paste by moistening and are pressed into cracks containing, or suspected of containing, bedbugs or their eggs.

If the powders are used in the dry form, they may be introduced into the crevices by means of an insect powder blower or "gun."

The liquid exterminators may consist of poisonous solutions like those containing corrosive sublimate or carbolic acid, or they may consist of oil of turpentine, kerosene, benzin, oil of cedar, etc., or they may consist of tinctures of bitter substances like colocynth or quassia, or they may consist of resinous solutions, or they may consist of soapy solutions, or again they may consist of several of these classes of substances in combination.

Substances like kerosene, benzin, volatile oils, etc., act by dissolving the chitinous coating of insects and thus obstructing the breathing pores and cause death. The resinous substances act largely by cementing over the eggs and thus prevent their hatching. The bitter substances mentioned are usually destructive to insect life.

The objections to these different substances or exterminative purposes are that resins, oil of turpentine, etc., leave stains, benzin, kerosene, etc., are inflammable, corrosive sublimate, paris green, etc., are excessively poisonous, carbolic acid has an unpleasant odor, etc. The evils of the different substances are

therefore often mitigated by combining several of them.

Liquid exterminators may be applied by means of a brush or feather, but a better method is to employ a machinist's oil-can or a bottle containing a perforated cork in which is inserted a quill.

I. One of the most commonly-used bedbug exterminators is the following:

Corrosive sublimate.....av.oz. 1
Alcohol.....fl.oz. 32

Or some of the alcohol may be replaced by water. However, inasmuch as it is the alcohol and not its corrosive consort, that is presumed to be the insecticide, this replacement is not to be recommended. Very frequently a portion of the alcohol, from about 20 to 80 per cent, is replaced by oil of turpentine; this reacts with the corrosive sublimate, precipitating the latter and being itself partially precipitated. Oil of turpentine alone is an excellent bedbug destroyer.

II.

Corrosive sublimate.....gr. 150
Ammonium chloride.....gr. 800
Decoction of quassia (about 1
in 20).....fl.oz. 32
Mix and dissolve.—H.

III.

Sodium chloride.....av.oz. 2
Zinc sulphate.....av.oz. 4
Water.....fl.oz. 32
Mix and dissolve.—H.

IV. A safe and satisfactory method of exterminating bugs in mattresses, upholstered furniture, etc., is by fumigation with sulphurous acid gas, that is, by burning sulphur in a closed room where these articles are located. The bleaching effect of the gas may be a disadvantage.

V.

Soft or green soap.....av.oz. 1
Caustic soda.....gr. 60
Water.....fl.oz. 14

VI.

Soft or green soap.....av.oz. 6
Turpentine (thick).....av.oz. 1½
Kerosene.....fl.oz. 3
Water, hot.....fl.oz. 20

Dissolve the soap in the hot water, incorporate the turpentine, then the kerosene and stir until cold.—D.

VII.

Naphthalin.....	av.oz. 8
Benzin.....	fl.oz. 30

This mixture may be used indiscriminately on bedding, furniture, textiles of all descriptions, wall-paper, etc.

VIII. There are a number of preparations on the market which are put up in flattened bottles, provided with a perforated metallic top and which consist mainly or entirely of benzin or gasoline, flavored with some volatile oil, and colored with alkanet. These preparations are known by such titles as "Bug Dynamite," "Bugine," etc. Like all benzin or gasoline preparations, they must be used with great caution to avoid explosion or ignition from contact with light or fire.

IX.

Resin.....	av.oz. 1
Benzin.....	fl.oz. 32
Oil of amber, crude.....	fl.dr. 2

Dissolve the resin in the benzin and add the oil.

X.

Oil of amber.....	fl.dr. 1
Oil of cedar.....	fl.dr. 1
Oil of eucalyptus.....	fl.dr. 1
Resin.....	av.oz. 1
Benzin.....	fl.oz. 64

Mix and dissolve.

XI.

Camphor.....	av.oz. 2½
Paraffin wax.....	av.oz. 2½
Oil of poppy.....	fl.oz. 5
Benzin.....	fl.oz. 25

Mix and dissolve.—H.

The oil of poppy may be replaced by the cheaper cotton seed oil.

The paraffin acts like resin in gluing over the eggs of the insect.

XII.

Picric acid.....	gr. 270
Stearic acid.....	av.oz. 1¼
Paraffin wax.....	av.oz. 1¼
Oil of cloves.....	fl.dr. 4
Kerosene.....	fl.oz. 32

Mix and dissolve.

XIII.

Acetic acid.....	fl.dr. 10
Oil of cloves.....	fl.dr. 3
Oleobalsamic mixture.....	fl.oz. 5
Alcohol.....	fl.oz. 24

—H.

XIV.

Naphthalin, crude.....	av.oz.
Tobacco, cut (or Scotch snuff).....	av.oz. 3
Benzin.....	fl.oz. 32
Oil of melissa.....	enough to flavor

Mix the naphthalin, tobacco and benzin, macerate for 5 days, agitating occasionally, decant the clear liquid, and flavor with the oil.

XV.

Colocynth, broken into small pieces.....	av.oz. 1½
Insect powder.....	av.oz. 1½
Benzin.....	fl.oz. 32

Mix, macerate for several days, agitating occasionally, and decant the clear liquid.

XVI.

Sodium borosalicylate.....	av.oz. 4
Water or decoction of quassia (1 in 20).....	fl.oz. 20
Spirit of lavender.....	fl.oz. 10

Mix and dissolve.

XVII.

Savin.....	av.oz. 1
Colocynth.....	av.oz. 1
Capsicum.....	av.oz. 1
Aloes.....	av.oz. 1
Water, hot.....	fl.oz. 40 to 50

Mix the drugs, previously reduced to coarse powder, with the water, and keep in a warm place for several hours, stirring occasionally, then allow to cool and decant the clear liquid.—H.

XVIII.

Oil of sage (volatile).....	fl.dr. 8
Lampblack.....	av.oz. ¼
Alum, powder.....	av.oz. 31

This may be made into a paste with water and smeared into the crevices of the wood work.

XIX.

Tobacco, powder (snuff).....	av.oz. 10
Insect powder.....	av.oz. 10
Carbolic acid.....	fl.oz. 8
Boric acid, powder.....	av.oz. 2½
Oil of citronella.....	fl.dr. 4

XX.

Insect powder.....	av.oz. 15
Pellitory, powder.....	av.oz. 15
Carbolic acid.....	fl.dr. 6
Oil of citronella.....	fl.dr. 6
Diluted alcohol.....	sufficient

Make a thin paste, which is to be brushed into the cracks.—H.

Benzin Jelly. (Gelatinized Benzin.)**I.**

Cocoanut oil soap.....	av.oz. 2
Ammonia water.....	fl.oz. 3
Solution of potassa.....	fl.oz. 1½
Water, enough to make.....	fl.oz. 12

Dissolve the soap with the aid of heat in 4 fluidounces of water, add the ammonia and potassa and the remainder of the water.

If the benzin is added in small portions, and thoroughly agitated, 2½ fluidounces of the above will be found sufficient to solidify 32 fluidounces of benzin.

II.

Cocoanut oil soap.....	av.oz. 1½
Ammonia water.....	fl.oz. 3
Glycerin.....	fl.oz. 1
Ether.....	fl.oz. 3
Water, distilled.....	fl.oz. 32

Prepare in a similar manner as the preceding, the finished solution containing only 17 grains of soap to the fluidounce.

III.

Tincture of quillaja.....	fl.oz. 3
Benzin, enough to make.....	fl.oz. 16

Mix and shake for half an hour, then allow to stand 12 hours to solidify.

Sixteen fluidounces of benzin may also be jellified with 4 fluidounces of a 20-per cent infusion of quillaja.

IV.

Castile soap, white.....	av.oz. 2½
Water, boiling.....	fl.oz. 3½
Water of ammonia.....	fl.dr. 5
Benzin, enough to make.....	fl.oz. 16

Dissolve the soap in the water, and when cold, add the other ingredients.

V.

Hard soap, white.....	av.oz. 3
Water, boiling.....	fl.oz. 5
Stronger water of ammonia.....	fl.oz. 8
Benzin.....	fl.oz. 26

Dissolve the soap in the water, and when nearly cold add the ammonia and the benzin, and then perfume to suit.

Soaps with an excess of alkali give the best results.

Bicycle Oil, Illuminating.

Equal parts of kerosene and lard oil.

Bicycle Oil, Lubricating.

Equal parts kerosene and castor oil.

Bicycle Paint (Glossy Black).

Amber.....	av.oz. 16
Linseed oil, boiling.....	fl.oz. 8
Asphaltum, Trinidad.....	av.oz. 3
Resin.....	av.oz. 3
Oil of turpentine.....	fl.oz. 16

Melt the amber in the boiling oil and add the asphaltum and resin. Mix thoroughly, remove to the open air, and gradually add the turpentine oil.

Useful for metallic surfaces, such as on bicycles.

Blackboard Slating or Paint.

In preparing these paints it is essential that the insoluble substances be reduced to very fine powder and that they be thoroughly incorporated in the mixture, and also that they be kept in a state of suspension, during the process of application, by constant agitation.

Of course, much depends upon the skill of the painter, for unless he prepares the surface of the board or wall well before putting on the paint, the latter cannot be expected to appear to the best advantage. Two coats are usually to be preferred to one, and uneven surfaces, after either coat has been applied should be rendered smooth by rubbing with sandpaper or emery cloth.

I.

Lampblack.....	av.oz. 1
Pumice stone.....	av.oz. 4
Boiled linseed oil.....	fl.oz. 8
Oil of turpentine, enough to make.....	fl.oz. 32

II.

Shellac.....	av.oz. 4
Lampblack (fine quality).....	av.oz. 1
Emery flour.....	av.oz. 1
Ultramarine blue.....	av.oz. 1
Alcohol.....	fl.oz. 32

Dissolve the shellac in the alcohol. Place the lampblack, emery and ultramarine blue on a cheese-cloth strainer, pour on part of the shellac solution, stirring constantly, and gradually adding the solution until all of the powders have passed through the strainer.

III.

Shellac.....	av.oz. 4
Lampblack.....	av.oz. ¼
Ultramarine blue.....	av.oz. 1¼
Rottenstone, powder.....	av.oz. 2
Pumice powder.....	av.oz. 3
Alcohol.....	fl.oz. 32

Dissolve the shellac in the alcohol, add the other ingredients, and shake well.

IV.

Ivory black	av.oz.	2
Emery flour	av.oz.	1
Ultramarine blue	av.oz.	1
Shellac	av.oz.	4
Alcohol	fl.oz.	82

Mix well and agitate until the shellac is dissolved.

Wood alcohol may be substituted for the alcohol.

Blacking for Shoes.

I.

Bone black	av.oz.	6
Molasses	av.oz.	24
Sugar	av.oz.	4
Train or fish oil	fl.oz.	8
Sulphuric acid, commercial	fl.dr.	5

Mix together and set aside for 10 or 12 hours, giving an occasional shake. Then add, under constant stirring, the following:

Decoction of tan bark	fl.oz.	4
Bone black	av.oz.	18
Sulphuric acid, commercial	fl.dr.	18

Which have previously been mixed and allowed to stand a few hours.

II.

Rape seed oil	fl.oz.	5
Simple syrup	fl.oz.	10
Water	fl.oz.	38
Ivory black	av.oz.	25
Sulphuric acid, commercial	fl.oz.	7

Mix the oil, syrup, and 25 fluidounces of water, then add slowly, with constant stirring, the acid, and finally the remainder of the water.

III.

Bone black	av.oz.	10
Fish oil	fl.oz.	1
Simple syrup	fl.oz.	4
Water	fl.oz.	25
Sulphuric acid, commercial	fl.oz.	1
Muriatic acid, commercial	fl.dr.	7
Ferrous sulphate	gr.	150

Mix the bone black, oil, syrup, and 20 fluidounces of water, gradually, and with constant stirring, add the sulphuric acid and then add the muriatic acid and the ferrous sulphate, previously dissolved, in the remainder of the water.—H.

IV.

Bone black	av.oz.	10
Molasses	av.oz.	6
Water	fl.oz.	5
Muriatic acid, commercial	fl.dr.	7
Sulphuric acid, commercial	fl.dr.	7
Oleic acid	fl.oz.	1

—H.

V.

Bone black	av.oz.	10
Rape oil	fl.oz.	1
Simple syrup	fl.oz.	2½
Mucilage of gum arabic	fl.oz.	1½
Diluted acetic acid	fl.oz.	2
Water	fl.oz.	2
Alizarin	av.oz.	4

—H.

VI.

Bone black	av.oz.	15
Simple syrup	av.oz.	9
Strong cider vinegar	av.oz.	8
Sulphuric acid, commercial	fl.oz.	1½
Caoutchouc	av.oz.	¼
Rape oil	fl.oz.	2

Mix the bone black, syrup and vinegar, stir well and add gradually, with constant agitation, the acid, set aside for 8 days, giving the mixture an occasional stir, and then add the caoutchouc previously dissolved in the oil by the aid of heat.

Blacking, Day & Martin's.

Ivory black	av.oz.	16
Sulphuric acid, commercial	fl.dr.	4
Olive oil	fl.oz.	1
Sugar	av.oz.	18
Diluted acetic acid, enough to make	gal.	1

Bleaching of Linseed and Poppy Seed Oil.

Mix 1 pint of the oil in a bottle with a solution of 150 grains of potassium permanganate in 8 fluidounces of water, shake thoroughly, set aside for 24 hours in a warm place, and then add 225 grains of sodium sulphite in coarse powder. Agitate the whole thoroughly until the latter is dissolved, and incorporate 5 fluidrams of crude hydrochloric acid. Shake frequently until the brown liquid has become quite light in color, and wash the oil with water containing a small amount of chalk until the washings are no longer acid. After separating all the water, the oil may be filtered through exsiccated sodium sulphate.—D.

Bleaching Sponges.

Soak the sponges in dilute muriatic acid over night; wash well to remove lime; dissolve 1 pound of hyposulphite of soda in a gallon of water, and immerse in this solution the moist sponges for several hours; then pass the sponges through a bath of dilute muriatic acid; wash in water and dry.

Bleaching of Sponges.

See "Sponges, Bleaching of."

Blue Prints.

See "Paper, Blue Print."

Bluing, Liquid.

Prussian blue.....	av.oz.	5
Oxalic acid.....	av.oz.	1 1/4
Water.....	fl.oz.	10

After solution is effected, dilute as much as desired.

Soluble blue or blue aniline may also be employed for making this preparation.

Copper, Bluing of.

Dissolve 1 part of Schlippe's salt in 15 of water, heat to boiling in a porcelain or porcelain-lined vessel, then introduce the copper, suspending the latter so it does not touch the sides of the vessel, allow it to remain until sufficiently affected, then remove, wash and dry.—H.

Boiler Compounds for Preventing Incrustation.

A great many substances are recommended as useful in preventing the lime of the water forming hard scales on the interior of steam boilers, and all act by preventing the agglutination of the particles. Among the best of these may be mentioned potatoes, one-fiftieth of the weight of the water being introduced glycerin, 8 pounds to every ton of coal consumed, is another useful addition. Sodium carbonate, ammonium chloride, molasses, spent tanner's bark, slippery elm bark, glucose, etc., are similarly employed. The following formulas for "boiler compounds" may also be employed:

I.

Catechu.....	av.lb.	2
Sal soda, crystal.....	av.lb.	2
Dextrin.....	av.lb.	1
Potash, crude.....	av.oz.	8
Alum.....	av.oz.	8
Sugar.....	av.oz.	8
Gum arabic.....	av.oz.	8

II.

Turmeric.....	av.lb.	2
Sodium bicarbonate.....	av.lb.	2
Dextrin.....	av.lb.	1
Potash, crude.....	av.oz.	8
Alum.....	av.oz.	8
Molasses.....	av.oz.	8

The foregoing amounts are for a 5-horse power boiler, and for water rich in lime. The next is for river water, 100-horse power boiler, and must be renewed whenever the boiler is emptied:

III.

Sal soda, crystal.....	av.lb.	18
Dextrin.....	av.lb.	18
Alum.....	av.lb.	6
Sugar.....	av.lb.	6
Potash, crude.....	av.lb.	8

Boiling Points of Saturated Aqueous Solutions.

Sodium acetate.....	256 degs. F.	125 degs. C
Sodium nitrate.....	246 degs. F.	119 degs. C
Potassium nitrate.....	238 degs. F.	115 degs. C
Ammonium chloride.....	236 degs. F.	114 degs. C
Sodium chloride.....	224 degs. F.	107 degs. C
Magnesium sulphate.....	222 degs. F.	106 degs. C
Alum.....	220 degs. F.	105 degs. C
Potassium chlorate.....	218 degs. F.	108 degs. C
Copper sulphate.....	216 degs. F.	102 degs. C
Iron sulphate.....	216 degs. F.	102 degs. C
Lead acetate.....	215 degs. F.	101 degs. C
Sodium sulphate.....	213 degs. F.	100 degs. C

Boric Acid to Powder.

This acid is found very difficult to reduce to a fine powder by ordinary manipulations, but a satisfactory and elegant powder may be made by the following process: First warm a wedgewood mortar by pouring into it a little alcohol and setting fire to it. Then put into the warm mortar the boric acid with a few drops of glycerin, when it will be found to be easily reduced to a fine powder.

Bottle Capping Mixture.**I.**

Gelatin.....	av.oz.	1
Gum arabic.....	av.oz.	1
Boric acid.....	gr.	20
Starch.....	av.oz.	1
Water.....	fl.oz.	16

Mix the gelatin, gum and acid with 14 fluidounces of cold water, stir occasionally until the gum is dissolved, heat the mixture to boiling, remove the scum and strain. Also mix the starch intimately with the remainder of the water, and stir this mixture into the hot gelatin mixture until a uniform product results. The latter may be tinted with any suitable aniline dye.

This mixture may be used instead of sealing wax for sealing bottles. In using it must be softened by the application of heat.—D.

II.

Shellac	av.oz.	8
Venice turpentine	av.oz.	1½
Boric acid	gr.	72
Talcum, powder	av.oz.	3
Ether	fl.dr.	6
Alcohol	fl.oz.	12½

Dissolve the shellac, turpentine, and acid in the mixed alcohol and ether, color with a spirit-soluble aniline dye, and add the talcum.

During use, the mixture must be agitated frequently.—D.

III. Put a weighed amount of dry glue or gelatin in water, and let it stand over night. In the morning drain and press off all the surplus water, and then dissolve the swollen mass by heating in a waterbath. Add while still in the bath about one-half as much glycerin as there is liquefied gelatin, and for every av. pound of gelatin employed add 1 av. ounce of tannic acid, and stir until entirely homogeneous. If it is desired to color the material any of the mineral colors may be used. Test the liquid on a piece of glass, and if when cold, it is too hard or brittle add a little more glycerin, and if too soft more glue and tannin, preserving the proportions indicated.

Cleaning of Greasy Bottles.

The following preparation is an efficient solvent for grease in obstinately dirty bottles:

Castile soap, in shavings	av.oz.	4
Sodium carbonate	av.oz.	2
Borax	av.oz.	1
Aqua ammonia	fl.oz.	7
Alcohol	fl.oz.	8
Sulphuric ether	fl.oz.	2
Soft water, enough to make	gal.	1

The soap should be boiled in the water until it is dissolved, and the other ingredients then added.

Brass Plating.

See "Plating with Gold, Silver," etc.

Brass, Polish for

I.

Oxalic acid	av.oz.	2
Pumice stone, powder	av.oz.	4
Water, enough to make	fl.oz.	16

25

Dissolve the acid in the water previous to adding the pumice.

Apply, after shaking, with a rag, and polish with a second dry woollen rag.

II. Dip the article in a mixture of 2 parts of common nitric acid and 1 part of sulphuric acid, contained in a stone jar. The articles, after being dipped in this mixture, are thoroughly washed with water and then rubbed with dry sawdust. A solution of oxalic acid is used in the same way, smooth surfaces being rubbed with prepared chalk, or equal parts of the latter (or whiting) and oxalic acid, made into a paste with water, may be applied. A great many other processes are employed, such as rubbing with rotten stone and sweet oil, and then with whiting; this is particularly effective with copper articles.

III. See also "Putz Pomades" and "Polishing Powders."

Brick Walls, Removal of Efflorescence on.

The usual method of treatment for removal of the white efflorescence on brick walls is by painting with dilute muriatic acid.

Bronze Paints.

The bronze colors as furnished in the pharmacy serve for temporary purposes; that is, they are expected, in addition to drying rapidly, to be fairly permanent, but not so much importance is laid upon their resisting moisture and atmospheric influences.

Where these latter qualities are desired a copal shellac varnish is the best; though the use of any such varnish is objectionable because the fatty or resinous acids, either already present or liable to develop have a chemical action on the copper of the bronze and are apt to cause it to turn green or to deaden the luster of the bronze.

The commercial liquid bronzes consist for the most part of solutions of resins in turpentine oil and should be rejected on the grounds above indicated. Another variety is made of a mixture of gum dammar, rubber and benzin and this does not present the objectionable features above noted in so marked a degree, but has the disadvantage that owing to the very rapid evaporation of the benzin it is difficult to work with.

The following formulas avoid these objections. The liquid bronze is particularly useful for applying to wicker work, plaster figures, frames, leather, etc. With bronze powder no previous coating with varnish is necessary. The bronze paints are used most in the gold, silver and copper colors.

I. Liquid bronze:

Bronze powder.....	av.oz. 11
Borax shellac solution.....	f.oz. 5
Alcohol.....	f.oz. 2

Rub the powder, adding the liquid very slowly; put in bottles holding about 1 ounce with not too narrow mouths and label with the following directions:

Shake before using until the contents are thoroughly mixed. Then apply with a camel's hair pencil, shaking again each time before dipping the pencil in.—D.

II. Weather-proof bronzing powder:

Bronze powder.....	av.oz. 18
Dextrin.....	av.oz. 8
Potassium bichromate.....	gr. 10

Powder the bichromate very fine and mix thoroughly with the other powders.—D.

III. Bronze powder, not weather proof:

Bronze powder.....	av.oz. 8
Dextrin.....	av.oz. 1

Dispense in paper parcels of about 150 grains each with the following directions:

Mix the contents of this package with 2 teaspoonfuls of water, set aside until no lumps are left, and then apply with a camel's hair brush.—D.

IV. Bronze paint for cheaper work may be prepared by mixing chrome green, 2 av. pounds; ivory black, 1 av.ounce; chrome yellow, 1 av.ounce; japan, 4 av.ounces. Grind together and thin with linseed oil.

V. Another formula is as follows:

Prepare a size consisting of benzoin, 60 grains; shellac, 1 av.ounce; alcohol, 4 fluid-ounces. After dissolving by means of a gentle heat, set aside in a cool place for several days and decant the clear solution. To this size the bronze powder is added in sufficient quantity. This paint is applied with a soft brush to the clean metallic surface, a second coat being given if desirable. Varnish over all. Sometimes the metal is

first ground by painting an orange or scarlet color.

Carriage-Top Dressing.

I.

Asphaltum varnish.....	f.oz. 32
Linseed oil, boiled.....	f.oz. 1
Oil of turpentine.....	f.oz. 6
Benzin.....	f.oz. 4

Mix the varnish with the oil, and add the turpentine and benzin.

II.

Burnt umber.....	av.oz. 8
Asphaltum.....	av.oz. 4
Linseed oil, boiled.....	gal. 1
Oil of turpentine.....	sufficient

Grind the umber with a little of the oil, add the asphaltum previously dissolved in a small quantity of the linseed oil by the aid of heat; then mix all together and boil; when cool add turpentine oil until a proper consistency is attained.

The carriage top should be thoroughly sponged with hot soap suds, rinsed and dried before the dressing is applied.

Cements.

These are frequently entitled "glues" and possibly some of the formulas to be found under "Glues, Liquid" will serve the purpose of a cement.

Cement, Acid Proof.

A cement which is proof against boiling acids may be made from India-rubber, tallow, lime and red lead. The India-rubber must first be melted by a gentle heat, and then 6 to 8 per cent by weight of tallow is added to the mixture while it is kept well stirred; next day slaked lime is applied, until the fluid mass assumes a consistence similar to that of soft paste; lastly, 20 per cent of red lead is added, in order to make it harden and dry.

Cement, Aquarium.

I.

Litharge.....	av.oz. 8
Sand, fine white.....	av.oz. 8
Plaster of paris.....	av.oz. 8
Resin, fine powder.....	av.oz. 1
Linseed oil,	
Drier.....	of each, sufficient

Mix the first 3 ingredients, add sufficient linseed oil to make a homogeneous paste, and then add a small quantity of drier. This should stand a few hours before using.

II.

Litharge.....	av.oz.	1
Sand, fine white.....	av.oz.	1
Plaster of paris.....	av.oz.	1
Manganese borate.....	gr.	20
Resin, powder.....	av.oz.	3½
Linseed oil varnish.....		
.....sufficient to form a paste		

D.

Cement for Bicycle Tires.

I.

Gutta percha.....	av.oz.	½
Caoutchouc.....	av.oz.	1
Carbon bisulphide.....	fl.oz.	4

Mix and dissolve.

This cement is dropped into the crevices after they have been properly cleaned. If the rent is very big apply the cement in layers. Bind up the rubber tire lightly with thread, let dry for 24 to 36 hours, cut off the thread and remove the protruding cement with a sharp knife, which must previously have been dipped in water.

II. A very good cement for attaching rubber tires to bicycles can be obtained by placing pulverized shellac in 10 times its weight of strong water of ammonia. The shellac becomes softened, a viscid transparent mass resulting, which, after standing for about 3 or 4 weeks, will liquefy.

This glue is always ready for use, only in cold weather it is necessary to soften it by placing in hot water. It keeps for years without spoiling if well corked. When applied to rubber the surface of the latter becomes soft, but hardens again after the evaporation of the ammonia. This is highly recommended for fastening rubber of any kind to smooth glass or metallic surfaces.

III.

Shellac.....	av.oz.	2
Gutta percha.....	av.oz.	2
Red lead.....	gr.	90
Sulphur.....	gr.	90

Melt the shellac and gutta percha, and add, with constant stirring, the red lead and sulphur, melted. Use while hot.

IV.

Caoutchouc, in fine shreds.....	av.oz.	1
Carbon disulphide.....	fl.oz.	4

Macerate in a well-covered vessel for several days.

V.

Caoutchouc, in fine shreds.....	av.oz.	½
Chloroform.....	fl.oz.	10

Dissolve by maceration.

VI.

Caoutchouc, in fine shreds.....	av.oz.	2
Resin.....	gr.	140
Shellac.....	gr.	100
Carbon disulphide.....		
.....enough to dissolve the other ingredients		

VII. A.

Caoutchouc, fine shreds.....	av.oz.	1
Chloroform.....	fl.oz.	20

Dissolve by maceration.

B.

Caoutchouc, fine shreds.....	av.oz.	1
Resin.....	gr.	180
Venice turpentine.....	gr.	90
Oil of turpentine.....	fl.oz.	4

For the solution B, the rubber is shaved into small pieces and melted with the resin; the turpentine is then added, and all is dissolved in the turpentine oil. The two solutions, A and B, are then mixed.

VIII.

Melt together 2 parts of asphalt or pitch and 1 of gutta percha at a gentle heat. This is to be used. If possible the wheels should be warmed.

IX. See also the rubber and gutta percha cements.

Cement for Coating, Boiler-Covering, etc.

Litharge.....	av.oz.	15
Boiled linseed oil.....	fl.oz.	3

Triturate them in a warmed mortar until a plastic mass results.—D.

Cement Casein.

Sodium borate.....	gr.	25
Water.....	fl.oz.	1

Dissolve and add sufficient casein to make a mass of the consistence of honey.

This is used for paper, cloth and leather.—D.

See also Nos. II., III. and IV. "Cements for Porcelain, Marble," etc.

Cement, Celluloid.

To repair broken articles in plaster, a good cement may be prepared by dissolving small pieces of celluloid in ether. Decant the

liquid after a short time. The pasty residue is a cement that will dry rapidly and not dissolve in water if the articles should be exposed to it.

Cement, Dental.

Sorel's cement for filling cavities in teeth is made by adding, rapidly, deliquescent chloride of zinc to enough oxide of zinc to make a thick paste, and applying it immediately.

Zinc phosphate cement is made by mixing zinc oxide with syrupy phosphoric acid made by boiling the 50 per cent phosphoric acid until the temperature rises to 215 degs. C.

Cement, Diamond or Armenian.

Isinglass	gr. 240
Mastic	gr. 120
Gum ammoniac or galbanum, powder	gr. 60
Alcohol	fl.oz. 4
Water	fl.oz. 4

Soak the isinglass in the water for 24 hours, evaporate on a water bath to 2 fluid-ounces, add 2 fluidounces of alcohol, strain, add the mastic dissolved in the remaining alcohol, and add the ammonia by trituration, avoiding loss of alcohol as much as possible.

This cement must be warmed before use.

Cement for Gas Burners.

Litharge,

Glycerin, of each sufficient to make a stiff paste

Cement for Glass.

I.

Brown glue, good quality	av.oz. 4
Acetic acid, 96 per cent	av.oz. 6
Ammonium bichromate, powder ..	gr. 90

Dissolve the glue in the water by the aid of moderate heat and the ammonium bichromate. The mixture should be preserved from light.

In using, apply to the surfaces to be cemented, tie together, set aside for several days to dry thoroughly, and then expose to strong sunlight.—D.

II. A solution of potassium bichromate and glue yields a superior cement for broken glassware. The moderately strong glue or gelatin solution is mixed in a dark place or in a photographic dark room, with a small amount of concentrated solution of potassium bichromate. The edges of the fracture,

which have been thoroughly cleaned, are then coated with a thin layer of the mixture, strongly pressed together and kept close by tying with twine, or in some other manner. The glass is then exposed to the sun for some hours. This causes the cement to become insoluble even in hot water.

III. The liquid glues are suitable for mending glassware which does not come in contact with liquids. See also "Cements for Porcelain, Marble, Earthenware," etc.

IV.

Caoutchouc, finely cut	av.oz. 4
Chloroform	fl.oz. 10
Mastic powder	av.oz. 4

Mix and macerate until dissolved. Apply with a brush. A larger proportion of caoutchouc renders the cement elastic.

Cement, Gutta Percha.

Gutta percha, in pieces	av.oz. 2
Carbon disulphide	fl.oz. 4
Oil of turpentine	fl.oz. 1
Asphalt, powder	av.oz. 2

Dissolve the gutta percha in the carbon disulphide and oil, add the asphalt and let stand for several days, when it will be ready for use.

This is used for mending leather, cementing leather upon wood, etc. Before using upon leather, the latter must be freed from fat by treatment with benzine.—D.

Cement for Iron.

I.

Sulphur	av.oz. 6
White lead	av.oz. 6
Borax	av.oz. 1

Mix well and make into a paste with sulphuric acid.

Apply cement to the parts, using pressure and allowing to stand for 5 to 7 hours.

II.

White bole	av.oz. 4
Borax	av.oz. 1
Asbestos, powder	av.oz. 1

Mix and make into a paste with water.

III.

Powdered iron	av.oz. 17
Sublimed sulphur	av.oz. 2
Ammonium chloride	av.oz. 1

The ingredients are rubbed with sufficient water to form a thick mass, and applied to

the parts, previously well cleansed. After 8 days the luting becomes as hard as iron, withstanding any temperature. The cement is therefore serviceable for mending distillatory apparatus.—D.

IV.

- Manganese dioxide, fine powder .av.oz. 1
Clay, dry.....av.oz. 4
Borax, powder.....av.oz. 5

Mix well.

In using mix enough water to form a very thick paste, fill this into the cracks, and set aside for 24 hours. This is useful for mending cracks in stoves. Upon the application of heat, the cement is melted and securely seals the crack.—D.

Cement for Attaching Glass Labels to Bottles.

Resinav.oz. 4
Yellow wax.....av.oz. 8

Cement or Glue, Marine.

Macerate 1 to 2 av.ounces of caoutchouc cut into small pieces in 16 fluidounces of benzol (not benzin), promoting solution by the application of heat and by agitation. To the solution when formed, and which will have the consistence of thick cream, add 30 av.ounces of powdered shellac, heat the mixture with constant stirring until complete fusion and combination have been effected. Pour this mixture while hot on plates of metal, so that it may cool in sheets like leather.

In using this cement, put some of it into an iron vessel, heat to 120 degs. C., and apply with a brush to the surfaces to be joined.

Cement for Meerschauum.

Use No. II. under "Cements for Porcelain, Marble," etc., and add 90 grains of calcined magnesia for every 4 av.ounces of casein.

"Diamond Cement" is also excellent for cementing meerschauum.

Cement for Fastening Metal to Glass.

Resinav.oz. 5
Yellow waxav.oz. 1
Venetian red.....av.oz. 1

Melt the wax and resin by aid of water bath and add under constant stirring the Venetian

previously well dried. Stir until nearly cool so as to prevent the Venetian red from settling to the bottom.

Cement for Mother-of-Pearl.

Isinglass, thin sheets.....gr. 240
Masticgr. 120
Ammonium chloride, powder....gr. 60
Alcohol.....fl.oz. 3½
Water.....fl.oz. 4

Steep the isinglass in the water for 1 day, and then dissolve by aid of a gentle heat, add 16 fluidounces of alcohol, pass through a cloth strainer, and to the hot solution add, with constant stirring, the mastic, previously dissolved in 12 fluidrams of alcohol, and the ammonium chloride.

The articles to be repaired should be warmed, the broken edges smeared with the cement and brought together, and so bound for 6 or 8 hours.

Cement for Mending Pestles and

Mortars.

To unite pestles with the handle, both should first be thoroughly cleansed, then melt together equal quantities of gutta percha and shellac (shellac alone is also used), fill the cavity of the pestle with the melted substance, then insert the handle, and retain the latter in proper position until cool.

Pieces of a pestle or mortar may be united in the same manner. It is advisable to warm the pieces before applying the cement.

A mixture of liharge and glycerin may also be employed for inserting loosened handles of pestles.

Cement for Porcelain, Marble, Alabaster, etc.

I.
Limeav.oz. 1
White of egg, freshav.oz. 2½
Plaster of paris.....av.oz. 5½
Water.....fl.oz. 1

Reduce the lime to powder, and triturate it with the white of egg to a uniform paste. Dilute this with the water, quickly incorporate the plaster of paris, and use the cement at once.—D.

The materials to be cemented must be ready at hand. The broken surfaces should be dampened with water so that the cement will at once adhere. The pieces must be

firmly pressed together and kept in this position for about 12 hours.

II

Casein, fresh.....av.oz. 4
Silicate of sodium, syrupy solution.....sufficient

Mix the casein in a mortar with enough of the solution to produce a uniform honey-like mass.

This cement is transparent and keeps for some time. It is not waterproof.—D.

III.

Casein, fresh.....av.oz. 5
Slaked lime.....av.oz. 1
—D.

IV.

Portland cement.....av.oz. 2
Prepared chalk.....av.oz. 1
Fine sand.....av.oz. 1
Solution of sodium silicate.....
..sufficient to form a semi-liquid paste

Apply the cement and allow to stand for 24 hours.

Cement for Porcelain Letters.

I.

Solution sodium silicate.....av.oz. 2
Slaked lime.....av.oz. 3
Litharge.....av.oz. 2
Glycerin.....sufficient

Mix the solution of sodium silicate and lime, add the litharge, and then enough glycerin to form a paste.

This should be used immediately.

II.

Copal resin.....av.oz. 1
White lead.....av.oz. 1
Litharge.....av.oz. 2
Linseed oil, boiled.....fl.oz. 3

Mix well and use at once.

Cement or Lute for Retorts, etc.

Clay, powdered and sifted.....av.oz. 6
Rye flour.....av.oz. 3
Bran.....av.oz. 1

Mix them well. When wanted, take a sufficient quantity and mix it with water to a dough to be applied to the retort or flask.—D.

Cement, Rubber.

I.

Carbon bisulphide.....fl.oz. 8
Gutta percha.....av.oz. ½
Resin.....gr. 40

II.

India rubber.....gr. 15
Chloroform.....fl.oz. 2
Mastic.....gr. 240

First mix the india rubber and chloroform together, and when dissolved the mastic is added in powder. It is then allowed to stand by for a week or two before using.

III. See also "Cements for Bicycle Tires."

Cements for Rubber Shoes.

The various "rubber cements," many of the "cements for bicycle tires," may be used in mending rubber shoes.

Cement, Sodium Silicate.

When sodium silicate solution is used as a cement it must be hardened by the gradual application of heat. If the object is heated quickly, air bubbles will form in the cement and weaken the joint. To resist the action of acids, make a paste of the solution with finely powdered glass, apply, and, after drying in a warm place for a day or more, heat, if possible, to redness. The gray enameled evaporating dishes may be repaired in this manner when fine holes have appeared in the enamel, and be made very serviceable.

A cement of great hardness and durability may be made by mixing chalk with a thick solution of sodium silicate. The chalk must be well incorporated with the liquid, and 8 or 10 hours are required for the cement to set. When this occurs, the mass is so hard as to be capable of taking a high polish. Mineral coloring materials may be added to this to match the color of the article to be mended.

Cement, Starch.

Starch.....av.oz. 1
White sugar.....av.oz. 4
Gum arabic.....av.oz. 1
Water.....sufficient

Dissolve the gum in a little hot water and the sugar and starch, and boil until the starch is cooked.

Good for repairing china, pottery, etc.

Cement, Winchell's.

Gum arabic, clear tears.....av.oz. 2
Starch.....av.oz. 1¼
Sugar.....av.oz. ½

Dissolve the gum in as much water as a laundress would use for the quantity of starch indicated; with this solution thoroughly incorporate the starch and sugar, then cook this mixture in a vessel suspended in boiling water until the starch becomes clear. The

cement should be as thick as tar and should be kept so. It may be preserved by the addition of a little camphor, or oil of cloves, sassafras, or wintergreen. The addition of a small amount of sassafras will increase its effectiveness.

Cement, Transparent.

Calcium nitrate.....	gr. 60
Gum arabic, powder.....	av.oz. 8
Water.....	fl.oz. 8

Dissolve the calcium salt in the water, and in this dissolve the gum arabic.

Chemical, Garden.

This may be prepared as follows:

Place a quantity of sand in a wide-mouthed bottle (or better, a half gallon fish-globe) to the depth of 2 or 3 inches; in this layer of sand, slightly imbed a few pieces of copper sulphate, aluminium sulphate and iron sulphate; pour over the whole a solution of sodium silicate (commercial water-glass) one part and water three parts, care being taken not to disarrange the chemicals in pouring in the solution. Upon standing a week or so, a dense growth of the silicates of the various bases used will be seen in various colors. Now displace the solution of the sodium silicate with clear water, by conveying a small stream of water through a small rubber tube (such as nursing bottle tubing) into the vessel, which will gradually displace the silicate of soda solution. Care must be taken not to disarrange or break down the growth with the stream of water. When successful this produces a very beautiful scene.

Cleansing Creams. (Electric Cleansing Compound, Lightning Renovator, or Japanese Cleansing Cream.)

I.	
Chloroform	fl.dr. 1
Alcohol.....	fl.dr. 2
Ammonia water	fl.dr. 10
Sodium carbonate.....	gr. 120
Castile soap.....	av.oz. 1
Water, distilled.....	fl.oz. 64

Cut the soap up fine and dissolve in some of the water. Dissolve the soda in the remainder of the water; add this in another bottle to the chloroform, alcohol and ammonia. When the castile soap is entirely dissolved add all these ingredients to it. Shake well and bottle securely.

II.

Stronger water of ammonia	fl.dr. 2
Glycerin.....	fl.oz. 1
Ether	fl.oz. 1
Castile soap, white.....	av.oz. 1
Water, enough to make.....	fl.oz. 32

To 16 fluidounces of water add in the following order the glycerin, ammonia and ether. Shake and add enough water to measure 32 fluidounces. Then add the soap in shavings and shake until dissolved.

III.

Castile soap.....	av.oz. 1½
Water.....	fl.oz. 64
Ammonia water.....	fl.oz. 8
Alcohol.....	fl.oz. 1½
Ether	fl.oz. 1½
Glycerin.....	fl.oz. 1
Oil of citronella or myrbane.....	drops 5

Prepare this like either of the preceding.

IV.

Glycerin.....	fl.oz. 1
Ether	fl.oz. 1
Alcohol.....	fl.oz. 1
Ammonia water.....	fl.oz. 4
Castile soap.....	av.oz. 1
Water, enough to make.....	fl.oz. 32

Prepare like the preceding.

V.

Castile soap.....	av.oz. 2
Sodium carbonate.....	av.oz. 1
Borax	av.oz. ½
Ammonia water.....	fl.oz. 4
Alcohol.....	fl.oz. 2
Ether	fl.oz. 1
Water, enough to make.....	fl.oz. 64

Prepare like the preceding.

VI.

Castile soap.....	av.oz. 1
Borax	av.oz. 1
Soap liniment.....	fl.oz. 1½
Alcohol.....	fl.oz. 2½
Ammonia water.....	fl.oz. 4
Water, boiling.....	fl.oz. 48

Dissolve the borax and soap in the hot water, and when cool add the other ingredients.

Cleansing Liquids.

These liquids are known by such titles as "Glove Detergent," "Peerless Glove Cleaner," "French Cleaning Liquid," "Lightning Renovator," etc. They are employed for removing various stains, but particularly grease and paint stains. Hence

they usually contain such grease solvents as benzin, chloroform, ether, etc.

See also "Stains, Removal of."

I.

Benzin.....	gal. 1
Chloroform.....	fl.oz. 4
Ether.....	fl.dr. 4
Oil of bergamot.....	fl.dr. 1

II.

Oil of turpentine.....	fl.oz. 5
Water of ammonia.....	fl.oz. 4
Wood alcohol.....	fl.oz. 5
Ether.....	fl.dr. 4
Acetic ether.....	fl.dr. 4
Water.....	fl.oz. 5

III.

Benzin.....	fl.oz. 64
Chloroform.....	fl.dr. 2
Ether.....	fl.dr. 2
Alcohol.....	fl.dr. 4
Oil of wintergreen.....	fl.dr. 4

IV.

Tincture of quillaja.....	fl.oz. 8
Ether.....	fl.oz. 4
Spirit of ammonia.....	fl.oz. 1
Oil of lavender flowers.....	fl.dr. 1½
Benzin.....	fl.oz. 26

Cockroach Exterminators.

See "Roach Exterminators."

Copper Plating.

See "Plating with Gold, Silver," etc.

Copper, Polish for.

See "Polish for Brass."

Counterfeit Coin Detector.

Silver nitrate.....	gr. 24
Nitric acid, pure.....	drops 15
Distilled water.....	fl.oz. 1
Mix and dissolve.	

Apply a drop to the suspected coin by means of a glass rod. If any other metal than silver is present in larger quantities than the standard United States alloy, a black spot or stain will be produced on the coin.

Oroton Bug Exterminators.

The same remedies may be employed for the extermination of oroton bugs as are employed against roaches.

Culture Fluids. (Nutrient Fluids.)

I. Pasteur's:

Ammonium tartrate.....	gr. 30
Potassium phosphate.....	gr. 6
Sugar.....	gr. 600
Distilled water.....	fl.oz. 13½
Dissolve and filter.	

II. Cohn's:

Ammonium tartrate.....	gr. 150
Ammonium acetate.....	gr. 150
Potassium phosphate.....	gr. 1½
Magnesium sulphate.....	gr. 1
Calcium chloride.....	gr. 1
Distilled water.....	fl.oz. 30

Dissolve and filter.—D.

III. Miquel's:

Peptone.....	gr. 150
Gelatin.....	gr. 15
Sodium chloride.....	gr. 40
Potassium carbonate.....	gr. 4
Distilled water.....	fl.oz. 16

Dissolve by aid of heat and filter.

Dentist's Amalgam Fillings.

The exact composition of these fillings is kept secret, but they are supposed to contain among other things mercury, gold, platinum, etc. The following formula may be used:

Tin, fine raspings.....	parts 81
Silver, fine raspings.....	parts 19
Mercury.....	parts 25

Mix, heat gently until dissolved, allow to cool, and press through chamois leather.

Another formula is the following:

Fletcher's platin-gold amalgam:

Platinum.....	parts 1.30
Gold.....	parts 3.35
Silver.....	parts 48.35
Copper.....	parts 1.65
Tin.....	parts 50.35

Another formula is this:

Telschow's gold amalgam.

Gold.....	parts 4.18
Silver.....	parts 55.00
Tin.....	parts 40.00

Dentist's Arsenic Paste or Nerve Destroyer.

I.

Arsenous acid.....	parts 2
Morphine sulphate.....	part 1
Creosote.....	sufficient to form a stiff paste

Used by dentists to destroy dental nerves so as to permit the filling of carious teeth. It should be used only under the direct supervision of a dentist.

II.

Arsenious acid.....	gr. 120
Morphine sulphate (or cocaine).....	gr. 4
Glycerin and water.....	
.....	equal parts to make a paste

Use like the preceding.

III.

Arsenious acid.....gr. 60
 Iodoform.....gr. 60
 Lysol.....sufficient to form a paste

IV.

Camphor, phenol and talcum, of each
 sufficient to make a paste.

Dentist's Modeling Wax.

I.

Resinav.oz. 1
 Olive oil.....fl.oz. 2
 Hard paraffin.....av.oz. 3
 Rose pink.....sufficient

Melt the resin and paraffin and mix with the oil and coloring, stir constantly until cool. The amount of oil may be increased or decreased according to the consistence desired. Liquid petrolatum, cottonseed oil, or other oil may be substituted for the olive oil.

V.

Stearinav.oz. 3
 Copal resin.....av.oz. 3
 Talcum, powder.....av.oz. 6
 Carmine, powder.....gr. 15
 Oil of rose geranium.....drops 20

Melt the copal by the heat of a sand bath, add the stearin, mix, remove from the fire, add the other ingredients and stir to produce a homogeneous mixture.

Diamond Dust. (Powdered Glass.)

Heat glass red hot, throw it into cold water, dry and powder it. This may be used for powdering the hair, and also as a polishing powder or for filtering acids, etc.

DISINFECTANTS.

The object of disinfection is to prevent the extension of infectious or contagious diseases by destroying the specific infectious material, known as bacteria, microbes or germs, which give rise to them. This is accomplished by the use of disinfectants.

Popularly the term disinfection is used in a much broader sense. Any chemical agent which destroys or masks bad odors, or which arrests putrefactive decomposition is spoken of as a "disinfectant." And in the absence of any infectious disease it is common to speak of "disinfecting" a foul cess-pool, or badsmelling stable, or privy vault.

This popular use of the term has led to much misapprehension, and the agents which

have been found to destroy bad odors—deodorizers—or to arrest putrefactive decomposition—antiseptics—have been confidently recommended and extensively used for the destruction of disease germs in the excreta of patients with cholera, typhoid fever, etc.

The various consequences which are likely to result from such misapprehension and misuse of the word "disinfectant" will be appreciated when it is known that many of the agents which have been found useful as deodorizers, or as antiseptics, are entirely without value for the destruction of disease germs. This is true, for example, as regards the iron sulphate or copperas, a salt which has been extensively used with the idea that it is a valuable disinfectant. As a matter of fact, iron sulphate in saturated solution does not destroy the vitality of disease germs or the infecting power of material containing them. This salt is, nevertheless, a very valuable antiseptic, and its low price makes it one of the most available agents for the arrest of putrefactive decomposition in privy vaults, etc.

Antiseptic agents also exercise a restraining influence upon the development of disease germs, and their use during epidemics is to be recommended, when masses of organic material in the vicinity of human habitations cannot be completely destroyed, or removed or disinfected.

While an antiseptic agent is not necessarily a disinfectant, all disinfectants are antiseptics, for putrefactive decomposition is due to the development of "germs" of the same class as that to which disease germs belong, and the agents which destroy the latter also destroy the bacteria of putrefaction, when brought in contact with them in sufficient quantity, or restrain their development when present in smaller amounts.

A large number of the proprietary "disinfectants" so-called, which are in the market, are simply deodorizers or antiseptics, of greater or less value, and are entirely untrustworthy for disinfecting purposes.

Antiseptics are to be used at all times when it is impracticable to remove filth from the vicinity of human habitations, but they are a poor substitute for cleanliness.

During the prevalence of epidemic diseases, such as yellow fever, cholera, typhoid fever, etc., it is better to use in privy-vaults, cess-pools, etc., those antiseptics which are also disinfectants—i.e., germicides; and when the contents of such vessels are known to be infected this becomes imperative. Disease germs exist not only in dejecta, but also in the atmosphere; they may be attached to clothing, the germs of tuberculosis may exist in sputa, etc.

In the sick room we have disease germs at a disadvantage, for we know fairly well how to find them as well as how to destroy them. Having this knowledge, our efforts should be directed to restrict the dissemination and propagation of these germs.

The disinfectants that are of the most value depend on the immediate object to be accomplished. Experiments have shown that among the most efficient of all true disinfectants must be ranked corrosive sublimate. But this is poisonous also to the higher animals, and cannot, therefore, have universal application. For disinfecting excrementitious products, it must be considered the best agent there is, and it can be employed also in treating articles of clothing, etc., which should also be boiled before they are again used. Potassium permanganate, which is far less poisonous, is useful, especially from its deodorizing power. While these substances can be employed in the form of a spray, and thus diffused through an apartment, they should be replaced in many cases by gaseous agents, which can more readily pursue the disease germs floating in the air. Of gaseous disinfectants, choice is had between sulphurous acid, chlorine and bromide, and to this list may be added also iodine. The results of recent researches prove that, of the agents available from their cheapness as disinfectants, corrosive sublimate, permanganate of potassium, chlorine, bromine, and perhaps the chloride of zinc, are the only ones having sufficient germicidal power to be worthy of consideration.

Disinfectants and Antiseptics.—Principles to be Regarded in use of.

1. Seek to prevent the disease germs from finding lodgment where they can multiply or

long retain life. To this end, houses, and especially hospitals and pest-houses, must be thoroughly ventilated. Scatter these germs where there is plenty of light and air, and they become harmless; in damp, dark spots they retain their vitality a long time, but sunlight, thorough desiccation, and the oxidizing action of the air, will speedily destroy them. There must be no neglected places about cellars or basements where they can hide themselves and thrive and multiply. Every part of the house, and, most of all, the drains, privy vaults, etc., whose function is to aid in disposing of refuse material, must be kept scrupulously clean. In the instruction issued by the National Board of Health, these points are emphasized and reiterated: "Disinfection cannot compensate for want of cleanliness nor of ventilation." "The most available agents in combating infectious diseases are fresh air and cleanliness."

2. Endeavor to prevent the propagation of these germs by sterilizing the soil on which they fall. Accumulations of refuse matter cannot be altogether avoided, but by the free use of antiseptics, they can be kept in such a condition that spores will not readily germinate in them. It is well known that decomposing organic matter affords the most favorable possible soil for the growth of the lower forms of vegetable and animal organisms. While foul odors are not, in themselves, an evidence of the presence of contagion, they give warning that there is danger, and it is well to heed the warning.

3. Attack the germs themselves, and endeavor to lower or destroy their vitality. This is what is to be accomplished by the use of disinfectants; but the germs are organisms of a very low grade of life, and are therefore not easy to kill. The study of the various disinfectants, with especial reference to their relative value in different diseases or under different circumstances, therefore becomes an important one. It is also essential to know the best means and modes of using them.

Disinfectants, When and Where to Use.

Disinfection of Excreta.—The infectious character of the dejecta of patients suffering from cholera and typhoid fever is well estab-

lished, and this is true of mild cases and of the earliest stages of these diseases as well as of severe and fatal cases. It is probable that epidemic dysentery, summer complaint, diphtheria and other diseases are disseminated by means of the alvine discharges of the sick. These should therefore be thoroughly disinfected. In cholera, diphtheria, yellow fever and scarlet fever, all vomited material should be regarded as infectious and should be disinfected. As in tuberculosis, diphtheria, scarlet fever and infectious pneumonia, the sputa should be disinfected or destroyed by fire.

Disinfection of the Person.—The surface of the body of a sick person, or of his attendants, when soiled with infectious discharges, should be at once cleansed with a suitable disinfecting agent. For this purpose Labarraque's solution, diluted with five times its volume of water, may be used. After carefully washing soiled surfaces with this solution, the disinfectant itself is to be washed away with a towel wet with water or with diluted alcohol, one part to ten. The surface of the body of the dead may be disinfected by the use of the same solution, and cloths wet with this solution should be placed over orifices from which infectious material is likely to escape.

In diseases like small pox and scarlet fever, in which the infectious agent is given off from the entire surface of the body, occasional ablutions with Labarraque's solution, diluted with 20 parts of water, will be more suitable than the stronger solution above recommended.

Disinfection of Clothing.—Boiling for half an hour will destroy the vitality of all known disease germs, and there is no better way of disinfecting clothing and bedding which can be washed, than to put it through the ordinary operations of the laundry. No delay should occur, however, between the time of removing soiled clothing from the person or bed of the sick and its immersion into boiling water. If circumstances make it impracticable to do this at once, clothing should be immersed in a suitable disinfecting fluid.

Disinfection of Apartments.—In the sick-room no disinfectant can take the place of

free ventilation and cleanliness. It is an axiom in sanitary science that it is impracticable to disinfect an occupied apartment; for the reason that disease germs are not destroyed by the presence in the atmosphere of any known disinfectant in respirable quantity. Bad odors may be neutralized, but this does not constitute disinfection in the proper sense of the term. These bad odors are, for the most part, an indication of want of cleanliness or of proper ventilation; and it is better to turn contaminated air out of doors than to attempt to purify it by the use of volatile chemical agents, such as carbolic acid, chlorine, etc., which are all more or less offensive to the sick and are useless as far as real disinfection is concerned.

For the complete disinfection of an apartment in which there has been a case of infectious disease, it is necessary to fill the room completely with chlorine, bromine, sulphurous acid gas, or hyponitric acid, and to keep it shut up for several hours, until every crevice is thoroughly penetrated and permeated by the disinfectant. But this thorough use of disinfectants is only admissible for the prevention of contagion after the recovery or death of the patient.

Disinfection of Privy Vaults, Cesspools, etc.—When the excreta—not previously disinfected—of patients with cholera or typhoid fever, have been thrown into a privy vault this should be infected, and disinfection should be resorted to as soon as the fact is discovered, or whenever there is reasonable suspicion that such is the case. This may be accomplished with corrosive sublimate or with chlorinated lime. The amount used must be in proportion to the amount of material to be disinfected.

Use 1 pound of corrosive sublimate for every 500 pounds—estimated—of fecal matter contained in the vault, or 1 pound of chlorinated lime to every 30 pounds.

Disinfection of Ingesta.—It is well established that cholera and typhoid fever, are very frequently, and perhaps usually transmitted through the medium of infected water or articles of food, and especially milk. Fortunately there is a simple means at hand for disinfecting such infected fluids. This consists in the application of heat. The boiling

temperature maintained for half an hour kills all known disease germs. So far as the germs of cholera, yellow fever, and diphtheria are concerned, there is good reason to believe that a temperature considerably below the boiling point of water will destroy them. But in order to keep on the safe side it is best not to trust anything short of the boiling point (212 degs. F.) when the object in view is to disinfect food or drink which is open to the suspicion of containing the germs of any infectious disease.

During the prevalence of an epidemic of cholera it is well to boil all water for drinking purposes, unless it comes from a source which is beyond suspicion, and especially if it is obtained from wells, or from rivers receiving the sewage of towns, etc. After boiling, the water may be filtered, if necessary, and then cooled with ice placed around the water vessel, not put directly into the water.

Forms of Disinfectants. — Disinfectants may be used in the form of gases as in chlorine, bromine or sulphur fumigation, or they may be used as liquids to be sprinkled about the sick room or poured upon cloths suspended about the room or poured upon excreta and other infected or infectious matter, or as liquids to be sprayed about the room by means of an atomizer (so-called aromatic disinfectants are used in this manner); they may be used as powders which consist of inert powder, mix with disinfectants; or the latter mixture may be formed into cakes; the disinfectants may also be used as pastilles, to be ignited in the room. The fumigating pastilles, powders, etc., of Part V. are also used with the idea of providing disinfection, but their disinfecting powers are very weak indeed. The incenses (see "Incense") are also used for a similar purpose and are similarly inefficacious.

I.

Aluminium chloride.....	av.oz. 6
Zinc chloride.....	av.oz. 1 ½
Sodium chloride.....	av.oz. 2
Calcium chloride.....	av.oz. 3
Water, enough to make.....	fl.oz. 32

Dissolve the aluminium and calcium salts separately, then mix and allow to settle. In the clear supernatant liquid dissolve the other ingredients.

This mixture may be aromatized by the addition of oils of eucalyptus and wintergreen, or oil of rosemary and thymol may be added.

II.

Alum.....	av.oz. 10
Sodium carbonate.....	av.oz. 10
Ammonium chloride.....	av.oz. 2
Sodium chloride.....	av.oz. 2
Zinc chloride.....	av.oz. 1
Muriatic acid, commercial,	
Water.....	of each, sufficient.

Dissolve the alum in ½ gallon of boiling water, then add the soda which precipitates the aluminium hydrate. Muriatic acid should then be added in sufficient quantity to dissolve the precipitate. The other salts should then be dissolved in 3 pints of water; this should be added to the first solution, and then enough water added to make 1 gallon.

III.

Zinc sulphate.....	av.oz. 7
Ferrous sulphate.....	av.oz. 7
Naphthol.....	gr. 20
Oil of thyme.....	drops 12
Hypophosphorous acid, diluted.....	fl.dr. ½
Water.....	fl.oz. 32

Dissolve the zinc and iron sulphates in 32 fluidounces of boiling water, add the naphthol and oil and shake the mixture occasionally in a stoppered bottle until cold. Then add the acid and filter.—N. F.

IV. Where iron is objectionable, as in the treatment of woven fabrics, the iron sulphate of the preceding formula may be replaced by aluminium sulphate (commercial will do), in which case the acid may be omitted.

V. This preparation is known as Burnett's disinfecting liquid, and also as Crew's disinfectant.

Zinc, granulated, or scraps....	av.oz. 7
Muriatic acid.....	fl.oz. 6 or sufficient
Water.....	fl.oz. 32

Dissolve, avoiding excess of acid.

VI. The following is known as Ledoyen's disinfectant:

A.

Litharge.....	av.oz. 4 ½
Nitric acid.....	fl.dr. 23
Water.....	fl.oz. 32

Dissolve the litharge in the acid and water previously mixed.

B.

Lead nitrateav.oz. 4
 Water, distilled.....fl.oz. 32
 Dissolve.

VII.

Ferrous sulphate.....av.oz. 8
 Ammonium chloride.....av.oz. 1
 Corrosive sublimate.....gr. 60
 Alcohol.....fl.oz. 4
 Water, enough to make.....fl.oz. 32

Dissolve the iron sulphate in 24 fluidounces of water, and the corrosive sublimate in the alcohol, mix the two solutions, add the ammonium chloride, and then enough water to make 32 fluidounces.

In using as a disinfectant, dilute with an equal volume of water.

VIII. The following was recommended by the Illinois Board of Health some years ago:

Sulphate of ironav.oz. 13
 Crude carbolic acid.....fl.oz. 12
 Water.....fl.oz. 48

IX. See "Crude Sulpho-carbolic Acid," Part I.

X. Chlorine fumigation:

Table saltgr. 375
 Manganese dioxidegr. 375

Reduce to fine powder, spread upon a saucer and add 1 fluidounce of common sulphuric acid. There will be a lively evolution of chlorine, during which time the room should be well closed.—D.

This mixture is sufficient to disinfect 1200 cubic feet of space.

Instead of the above mixture, chlorinated lime and dilute muriatic acid may be used.

XI. Nitric or nitrous fumigation:

Place 4 av.ounces of powdered potassium nitrate in a saucer and add, little by little, 2½ fluidounces of crude sulphuric acid previously diluted with 2 fluidounces of water.—D.

XII. Sulphurous fumigation:

Sulphur, sublimed.....av.oz. 7
 Potassium nitrate.....av.oz. 4
 Benzoïn.....av.oz. 2
 Olibanum.....av.oz. 2
 Camphor.....av.oz. 1

Usually, however, simply sublimed or roll sulphur is used for sulphurous fumigation. Latterly "sulphur candles" are used, which consist of sulphur poured in a melted condition upon a coil of wicking.

XIII. Tar fumigation.

Pine tar.....av.oz. 2
 Potassium carbonate.....av.oz. ½
 Water.....fl.oz. 16

Mix and let simmer in an open vessel standing on a flame or a hot stove.

This is mentioned here, not because of its value, but for the reason that there may still be some demand for it.

XIV.

Carbolic acid.....fl.oz. 1
 Alcohol.....fl.oz. 1
 Diluted acetic acid.....fl.oz. 14

Use as a spray, or sprinkle about the room, or else dilute with water, moisten cloths with the mixture and suspend in the room.

XV.

Mentholgr. 30
 Oil of lavender.....fl.dr. 1
 Oil of lemon.....fl.dr. 1
 Oil of eucalyptus.....fl.dr. ½
 Tincture of benzoin.....fl.dr. 6
 Alcohol.....fl.oz. 16

Use like the preceding.

XVI.

Oil of eucalyptus.....fl.dr. 1
 Oil of bergamot.....fl.dr. 1½
 Acetic ether.....fl.dr. 1½
 Glycerin.....fl.dr. 2
 Alcohol.....fl.oz. 16

Use like the preceding.

XVII.

Calcium sulphate.....av.oz. 6
 Quicklime.....av.oz. 4
 Magnesia (or carbonate).....av.oz. 4
 Crude carbolic acid.....fl.oz. 6
 Infusorial earth or fine clay.....av.oz. 8

Reduce the mixture to fine powder.

XVIII.

Lime.....av.oz. 16
 Coal tar.....fl.oz. 4
 Infusorial earth.....
 sufficient to make a powder

XIX.

Sulphate of iron.....av.oz. 17
 Plaster of paris.....av.oz. 8
 Infusorial earth or fine clay.....av.oz. 1½

XX. A disinfectant tablet may be prepared as follows:

Intimately mix 4 av.ounces of powdered talc with 10 av.ounces of plaster of paris and 2 fluidounces of carbolic acid; sufficient

water is then added to form a mass, which is poured into small paper capsules prepared for the purpose. The mass soon becomes hard; each tablet is wrapped in paper and tinfoil, and the whole preserved in a tin box.

For use, the wrapper is removed and the tablet is placed in a suitable place in the room, in which a pretty strong odor of phenol will be perceptible for 10 or 15 days, according to the temperature.

XXI. Tin waste or scraps, such as old or useless tin cans, tin boxes, etc., may be utilized to make a disinfectant fluid by throwing them into a wooden barrel or cask containing dilute muriatic acid; the acid gradually dissolves the tin and iron present.

XXII. The following directions are well adapted for placing on bottles of liquefied crude carbolic acid, to which 5 per cent of soft soap has been added:

MIX ONE PART OF THE SOLUTION WITH TWENTY PARTS OF WATER.

To Purify Sick Rooms.—Moisten with the diluted solution a piece of flannel cloth attached to a long rod, and wave it through the air of the apartment a few minutes. Also, sprinkle it over the floor, and put a small quantity of the solution into the close-stools and bed-pans.

To Purify the Odor of Night Chairs.—Put a half pint of the dilute solution into the pan previous to its use, and when emptied rinse it out with a small quantity.

To Disinfect Cesspools, Drains, Water Closets.—Pour in a quantity of the solution in proportion to the capacity of the receptacle. For ordinary water closets, 1 gallon of the diluted solution will generally be effectual. For large cesspools the quantity must be increased in proportion to their contents.

To Purify Larders and Stables.—Sprinkle the floor and wash all the woodwork with the dilute solution, avoiding the use of soap or alkali.

To Sweeten Musty Casks, Tubs, etc.—Wash and rinse them well with the dilute solution.

To Extirpate Bugs and Other Vermin.—Wash the floors and all the crevices with the dilute solution. The joints, etc., of the bedsteads should be moistened by a brush, with

a solution consisting of 1 part of the fluid to 2 parts of water.

OBSERVE IN ALL CASES THE DIRECTION TO DILUTE THIS SOLUTION BEFORE USING.

Doses, Rules for.

Wiggins' rules for doses are as follows:

1. The dose of all infusions is 1 to 2 fluid-ounces, except digitalis, which is 2 to 4 fluid-drams.
2. All poisonous tinctures, 5 to 20 minims, except tincture of aconite, which is 1 to 5 minims.
3. All wines, from $\frac{1}{2}$ to 1 fluidram, except wine of opium, which is 5 to 15 minims.
4. Most solid extracts can be given in doses of $\frac{1}{2}$ grain; the exceptions are the extracts of poisonous drugs.
5. All diluted acids, from 5 to 20 minims, except hydrocyanic acid, which is from 2 to 5 minims.
6. All waters, from 1 to 2 fluidounces, except chloroform, creosote, cherry-laurel, bitter almond, and ammonia waters.
7. Medicated syrups, usually from $\frac{1}{2}$ to 2 fluidrams.
8. Mixtures, from 1 to 4 fluidrams.
9. Spirits, from $\frac{1}{2}$ to 1 fluidram, except spirit of glonoin.
10. Essential oils, 1 to 3 minims.

Young's rule to determine the dose of a child is to divide the age of the child by the age plus 12; the quotient represents the portion of the adult dose to be given to the child. For example: The age of the child is 6; divide 6 by 6 plus 12— $\frac{6}{18}$ — $\frac{1}{3}$; a 6-year-old should receive $\frac{1}{3}$ of the dose given to an adult.

Driers. (Siccative.)

Manganese borate alone may be used as a solid drier; however, its action is usually too powerful, and it is usually mixed with other substances. The following mixtures are used: Zinc oxide, 4 parts, manganese borate, part 1; and equal parts zinc oxide and manganese borate.

The manganese borate may be prepared from the residue remaining after the extraction of chlorine from a mixture of black oxide of manganese and hydrochloric acid.—D.

Cobalt borate may be employed instead of the manganese borate.

Liquid drier may be produced by heating 100 parts of linseed oil over the naked flame, stirring constantly until it weighs 85 parts.

—D.

See also "Varnish, Linseed Oil."

Dyes for Easter Eggs.

See "Easter Egg Dyes."

Dyes for Fabrics.

Fabrics cannot be dyed promiscuously—one color upon another—and certain rules must necessarily be observed. Inasmuch as these should be known to the pharmacist, they are stated here. All the directions contained herein refer to the coal tar dyes, or aniline colors, from which the package dyes of the market are prepared exclusively.

1. White, that is, uncolored, but unbleached goods, may be dyed any color.

2. Yellow goods may be dyed with orange, red, green, brown, gray, or black. Dark blue, violet, or a moderately strong black dye will produce a dark olive-brown color.

3. Red goods may be dyed with red, violet, coffee-brown or dark brown. Black, dark blue, or dark green will give a dark brown color.

4. Violet goods may be dyed with violet, black, coffee-brown, dark brown, or dark green. Orange will produce a brown, and dark green a dark-bronze brown color.

5. Blue goods may be dyed with blue, violet, black, coffee-brown, dark brown, or dark green. Orange dye will produce a brown color.

6. Green goods may be dyed with green, coffee-brown, dark brown, or dark gray. Upon dyeing over with black, a dark green to black color will be produced.

7. Brown goods may be dyed with brown or black. Red will produce a red-brown color, and black or dark blue a dark brown color.

8. Gray goods may be dyed with gray, brown, dark red and dark green. If the goods are light gray, they may be dyed with marine blue. Violet will produce a gray violet, and dark blue a more or less dark blue gray to black color.

9. Black goods can only be re-dyed with black.

The following directions will indicate how the various dyes are to be employed:

Free the goods from stains, wash well in warm soap water, rinse thoroughly with clear water, and place into rain or river water contained in an earthen or copper vessel large enough so that the liquid will be several inches above the goods. Now dissolve the dye in another vessel by boiling for several minutes in rain or river water; remove the goods from the first vessel; remove as much of the water as possible by expression, returning the expressed water to the vessel; add the dye solution to the water, and then return the goods to the vessel now containing the dye bath. Heat the whole to boiling, turning about continuously with a stick; allow to boil for several minutes; remove the goods from the bath, wash well in clear water; express lightly, and dry in the air.

If it is desired that the goods shall have a glossy appearance upon drying, the dry goods should be sponged on the inner surface with tragacanth water, after which they should be ironed till dry.

The following mixtures should be wrapped in good paper, the latter to be enclosed in envelopes, which should be sealed securely.

—D.

I. Black:

Aniline, deep black R.av.oz. 2
Oxalic acidgr. 290
Dextrinav.oz. 4

This is sufficient for 1 to 2 pounds of silk or wool. It is not suitable for cotton.

II. Blue, dark:

True blue, Rgr. 240
Oxalic acidgr. 60
Dextringr. 300

This is sufficient for 1 pound of silk or wool; it is not adapted to cotton.

III. Blue, imperial:

Water blue, T B.gr. 110
Oxalic acidgr. 28
Dextrinav.oz. 1½

This is sufficient for 1 pound of silk, wool cotton or linen.

IV. Blue, marine:

New Victoria green, II.gr. 60
Methyl violet, B.gr. 60
Dextringr. 180

This is sufficient for 1 pound of silk, wool or cotton.

V. Blue, sky:

Water blue, IB.....gr. 70
Oxalic acid.....gr. 18
Dextrin.....gr. 500

This is sufficient for 1 pound of silk, wool or cotton.

VI. Brown, Bismarck:

Vesuvius S.....gr. 115
Dextrin.....av.oz. $\frac{3}{4}$

This is sufficient for 1 pound of silk, wool or cotton.

VII. Brown, coffee:

Vesuvius B.....gr. 240
Dextrin.....gr. 860

This is sufficient for 1 pound of silk, wool or cotton.

VIII. Gray:

Nigrosin, W.....gr. 90
Oxalic acid.....gr. 80
Dextrin.....av.oz. 1

This is sufficient for 1 pound of silk or wool; it is not adapted to cotton.

IX. Green:

New Victoria green.....gr. 75
Dextrin.....gr. 225

This is sufficient for 1 pound of silk, wool or cotton.

X. Orange:

Orange II.....gr. 120
Oxalic acid.....gr. 25
Dextrin.....gr. 250

This is sufficient for 1 pound of silk, wool or cotton.

XI. Red, amaranth:

Diamond fuchsin I, small crystals.gr. 45
Dextrin.....av.oz. 1

This is sufficient for 1 pound of silk, wool or cotton.

XII. Red, cherry:

Cerise D, IV.....gr. 50
Dextrin.....gr. 200

This is sufficient for 1 pound of silk, wool or cotton

XIII. Red, imperial:

Erythrosin, IN.....gr. 90
Dextrin.....gr. 860

This is sufficient for 1 pound of silk, wool or cotton.

XIV. Scarlet:

True ponceau, GGN.....gr. 180
Oxalic acid.....gr. 86
Dextrin.....av.oz. 2

This is sufficient for 1 pound of silk, wool or cotton.

XV. Violet, bluish:

Methyl violet, 8 B.....gr. 75
Dextrin.....gr. 225

This is sufficient for 1 pound of silk, wool or cotton.

XVI. Violet, reddish:

Methyl, violet R.....gr. 90
Dextrin.....av.oz. $\frac{1}{2}$

This is sufficient for 1 pound of silk, wool or cotton.

XVII. Yellow:

Naphthol, yellow S.....gr. 120
Oxalic acid.....gr. 24
Dextrin.....av.oz. 1

This is sufficient for 1 pound of silk or wool; it is not adapted to cotton.

Dyeing Leather.

I. Black:

Treat with a solution of ferrous sulphate or iron acetate. The leather may first be mordanted with a solution of extract of logwood.

II. Blue:

Extract 150 grains of nutgall with 82 fluidounces of water and brush the leather with this liquid. Then brush over with a solution of 150 grains soluble blue aniline and 75 grains of glue in 82 fluidounces of water. Use each mixture three times, then dry and finish with yolk of egg.

III. Brown:

Apply an intimate mixture of 4 av.ounces of umber (raw or burnt), $\frac{1}{2}$ av.ounce of lampblack, and 17 fluidounces of oxgall.

IV. Green:

Dissolve 1 av.ounce of alum in 1 gallon of water which furnishes the mordant.

The dye consists of 4 av.ounces of indigo-carmin dissolved in 7 pints of boiling water, 2 pints of strong decoction of fustic, and 8 fluidounces of logwood.

V. Red:

Apply a tincture made from 1 av.ounce of cochineal and 16 fluidounces of 80-per cent alcohol.

VI. Yellow:

Extract 1 av.ounce of turmeric and $\frac{1}{2}$ av. ounce of gamboge with 24 fluidounces. The leather requires mordanting with a solution of alum or potassium carbonate before applying the dye.

Easter Egg Colors or Dyes.

The following mixtures containing coal tar colors are intended for the dyeing of easter eggs. About 75 grains may be wrapped in parchment or waxed paper and put up in a package, which will be sufficient for at least 5 eggs. If more than one color is intended for one package, smaller amounts of each dye may be put up in each individual package. The directions on a 75-grain package should be as follows:

Dissolve the dye in a porcelain or earthen vessel in 1 pint of boiling water, stirring until solution is completed. In the meantime boil 5 well-washed eggs in water for 5 minutes, then transfer them to the dye bath, and allow to remain until sufficiently colored, turning the eggs about occasionally. Then dry them with a soft cloth, without pressure, and rub with oil or fat meat until they appear glossy. The remaining dye can be used for 5 or more eggs if desired.—D.

I. Blue:

Marine blue, BN.....gr. 60
Citric acid.....gr. 600
Dextrin.....av.oz. 2
Mix well and divide into 20 parts.

II. Brown:

Vesuvium, S.....av.oz. 1
Citric acid.....av.oz. 1¼
Dextrin.....av.oz. 1
Mix well and divide into 20 parts.

III. Green:

Brilliant green, O.....gr. 225
Citric acid.....gr. 300
Dextrin.....av.oz. 2¼
Mix well and divide into 20 parts.

IV. Orange:

Orange, I I.....gr. 150
Citric acid.....gr. 300
Dextrin.....av.oz. 2¼
Mix well and divide into 20 parts.

V. Red:

Diamond, fuchsin, I, small
crystals.....gr. 60
Citric acid.....gr. 300
Dextrin.....av.oz. 2¼
Mix well and divide into 20 parts.

VI. Rose:

Eosin, A.....gr. 75
Dextrin.....av.oz. 3
Mix well and divide into 20 parts.

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VII. Violet:

Methyl violet, 6 B.....gr. 60
Citric acid.....gr. 300
Dextrin.....av.oz. 2¼

Mix well and divide into 20 parts.

VIII. Yellow:

Naphthol, yellow, S.....gr. 225
Citric acid.....gr. 600
Dextrin.....av.oz. 2¼

Mix well and divide into 20 parts.

Eggs, Preservation of.

One pound of lime should be stirred with a gallon of water, and the eggs, perfectly fresh, immersed therein in barrels or jars. This excludes air and any germs that might cause mildew or mold, and prevents evaporation, so that the contents of the eggs are not reduced in bulk. It is important to have a considerable excess of lime to replace any that may become carbonated. The vessels containing the eggs should be kept in a cool, well-ventilated place. A very successful variation in the process consists in imbedding new-laid eggs, warm from the nest, in a thick paste of lime and water. Eggs thus preserved for six months could hardly be distinguished from those newly laid. The contents of eggs evaporate rather rapidly through the shell, and the object of the preserver must be to prevent this evaporation, and at the same time to allow for the expansion and contraction of the natural air-space in the egg due to changes of temperature. The plan of coating the shells with wax or melted paraffin fails in the latter particular. Strong brine fails because the contents of eggs preserved in it become much reduced in bulk.

Eggs for keeping should never be laid on their sides; pack with the small end down.

Embalming Fluids.**I.**

Arsenous acid.....gr. 360
Mercuric chloride.....av.oz. 1¼
Alcohol.....fl.oz. 9
Solution of carbolic acid, 5 per
cent.....fl.oz. 120

From 10 to 12 pints of this are injected into the carotid artery—at first slowly and afterward at intervals of from 15 to 30 minutes. The addition of a little red aniline imparts to the corpse a life-like hue.

II. Brunelli's embalming process is as follows:

The circulatory system is cleansed by washing with cold water until it issues quite clear from the body. This may occupy from 2 to 5 hours. Alcohol is then injected so as to extract as much water as possible. This requires about 15 minutes. Ether is then injected to remove fatty matters, this requiring from 2 to 10 hours. A strong solution of tannin is injected and allowed to be absorbed, which will require from 2 to 10 hours. The body is then dried in a current of warm air, which has passed over calcium chloride. This may occupy from 2 to 5 hours, when the operation is complete.

III.

Thymol	gr. 15
Alcohol	fl.dr. 3
Glycerin	fl.oz. 10
Water	fl.oz. 5

Dissolve thymol in the alcohol, then add the glycerin and water.

Etching Copper, Liquid for.

Solution of ferric chloride, U.

S. P.	fl.oz. 13
Sodium chloride	av.oz. 4¾

Mix and dissolve.—H.

Etching of Glass, Tin and Zinc.

See "Ink, Diamond," and "Ink for Writing on Metals."

Etching Iron and Steel, Liquid for.

I.

Corrosive sublimate	av.oz. 1
Tartaric acid	gr. 40
Nitric acid	fl.dr. ½
Water	fl.oz. 24

Mix and dissolve.—H.

II.

Tincture of iodine	fl.oz. 8½
Potassium iodide	av.oz. 1
Distilled water	fl.oz. 5

Mix and dissolve.—H.

Feathers, Bleaching of.

Feathers turned yellow are bleached according to one process by soaking them for a few hours in a warm soap bath (78 to 85 degs. C.) which should not be too strong, rinsing and exposing them, strung upon a thread, for some time to the sun, frequently moistening them meanwhile.

According to another process, the feathers, after having been treated in the warm soap

bath, should be rinsed off and transferred to water acidulated with sulphurous acid. Here they should be allowed to remain for 20 or 30 hours, then washed, drawn through a weak, lukewarm soap bath, and dried in the sun, or left in the sun for 1 or 2 days, being frequently moistened.

According to Dobereiner, a solution of ammonium carbonate is the best means of bleaching feathers as it effects the purpose much quicker than sulphurous acid.

Fertilizers.

These are intended for the fertilization of garden and flowering plants. They are often put up under such names as "Plant Food," "Lawn Fertilizers," "Chemical Food for Plants," etc.

I.

Sugar	av.oz. 2
Ammonium sulphate	av.oz. 8
Potassium nitrate	av.oz. 4

Each ingredient in moderately fine powder is mixed by passing through a sieve. It could be put up in packages to sell for 25 cents per pound. The directions for use are: One teaspoonful in a gallon of water, to be used in sprinkling upon the plant after sundown about twice a week.

II.

Calcium phosphate	av.oz. 4
Potassium nitrate	av.oz. 1
Potassium phosphate	av.oz. 1
Magnesium sulphate	av.oz. 1
Iron (ferric) phosphate	gr. 90 to 175

Mix well.

In using, mix 30 grains with 1 quart of water and with this sprinkle the plants.

A superior mixture is produced by using instead of the insoluble calcium phosphate, the soluble acid "superphosphate."—D.

III.

Ammonium nitrate	av.oz. 4
Ammonium phosphate	av.oz. 2
Potassium nitrate	av.oz. 2½
Ammonium chloride	gr. 220
Calcium sulphate	gr. 200
Ferrous sulphate	gr. 175

Mix well and use like the preceding.—D.

IV. Fertilizing Mixture for Lawns:

Sodium nitrate	av.oz. 8
Superphosphate of calcium	av.oz. 10
Guano	av.oz. 20
Gypsum	av.oz. 12

This should be applied once or twice a year. This yields excellent results.

Filter Paper Toughened.

Filter paper may be toughened by immersing in concentrated nitric acid and washing with water. It is then remarkably toughened, the product being pervious to liquids, and quite different to the parchment paper made by means of sulphuric acid. It can be washed like a piece of linen. So treated it contracts in size, and the ash is diminished, the weight is slightly reduced, and it contains no nitrogen. The toughened paper can be used with the vacuum-pump in ordinary funnels, without extra support, and fits sufficiently close to prevent undue access of air, which is not the case with parchment paper. Another admirable way of preparing filters is this: Dip only the apex of the folded paper into nitric acid, and then wash with water; the weak part is thus effectually toughened:

Fires, Colored.

Colored fires are composed essentially of three kinds of ingredients, viz.: a combustible, an oxygen producer, and a coloring agent. The cheaper "fires" usually contain sulphur as a combustible, while the better ones contain shellac, sometimes lycopodium. Those containing sulphur are not adapted to indoor use because of the irrespirable sulphurous acid gas which is produced. It is to be noted, also, that "fires" containing a poison like an arsenic compound or calomel are also not to be employed for indoor use.

The second kind of ingredient, the oxygen producer, is usually potassium chlorate or potassium nitrate.

The coloring agent depends, of course, upon the color desired—a barium salt being used for red, a strontium salt for green, a copper salt for blue, etc.

The ingredients of "fires" should always be quite dry; in fact, it may be necessary to dry them before mixing. They should also always be in quite a fine powder. Shellac, which, as is stated, is a common ingredient of these "fires," may be reduced to powder by grinding in a mill. The ingredients now dried and powdered may be mixed by means of the hand or a wooden (not steel) spatula. Triturating or rubbing in any way likely to

cause much friction, must be avoided because of the danger of spontaneous combustion.

Fire, Blue.**I.**

Sulphur	av.oz. 8
Potassium sulphate	av.oz. 8
Ammonio, sulphate of copper	av.oz. 8
Potassium nitrate	av.oz. 5½
Potassium chlorate	av.oz. 5½

II.

Realgar	av.oz. ¼
Charcoal, wood	av.oz. ¾
Potassium chlorate	av.oz. 1½
Sulphur	av.oz. 3½
Barium nitrate	av.oz. 19

III.

Potassium nitrate ..	av.oz. 8
Antimony sulphide ..	av.oz. 4
Zinc (metallic)	av.oz. 2

IV.

Potassium chlorate ..	av.oz. 6
Alum, dried	av.oz. 8
Shellac	av.oz. 2
Sulphur	av.oz. 1

V.

Potassium chlorate ..	av.oz. 17
Calcium carbonate ..	av.oz. 8
Malachite, powder ..	av.oz. 2½
Sulphur	av.oz. 2½

VI.

Orpiment	gr. 60
Charcoal, wood	gr. 60
Black antimony	av.oz. 2
Potassium nitrate ..	av.oz. 6
Sulphur	av.oz. 8

VII.

Shellac	av.oz. 4
Potassium chlorate ..	av.oz. 4
Ammonia-copper sulphate ..	av.oz. 12

VIII.

Copper sulphate	av.oz. 1
Calcium carbonate ..	av.oz. 3½
Potassium chlorate ..	av.oz. 7½
Sulphur	av.oz. 2½

IX.

Shellac	av.oz. 2
Potassium chlorate ..	av.oz. 4
Copper ammonia sulphate ..	av.oz. 5

—D.

X.

Potassium chlorate ..	av.oz. 10
Ammoniated copper	av.oz. 7
Dextrin	av.oz. 2½
Stearin	av.oz. ¾

XI.

Copper oxide.....	av.oz. 1
Sulphur.....	av.oz. 2
Potassium chlorate.....	av.oz. 3
Potassium nitrate.....	av.oz. 4

—D.

Fire, Brilliant Stars.

Potassium nitrate.....	av.oz. 8
Sulphur.....	av.oz. 2
Black antimony.....	av.oz. 2

Make this into a stiff paste with this solution:

Isinglass.....	fl.oz. 1
Diluted acetic acid.....	fl.oz. 4
Alcohol.....	fl.oz. 7

Form into small pieces, and while still moist roll in meal gunpowder.

Fire Crimson.

I.

Strontium nitrate.....	av.oz. 17
Sulphur.....	av.oz. 5½
Charcoal, willow.....	av.oz. 1½
Potassium chlorate.....	av.oz. 1

II.

Potassium chlorate.....	av.oz. 2
Strontium nitrate.....	av.oz. 18
Charcoal.....	av.oz. 1
Shellac.....	av.oz. 4

Fire, Golden Rain.

I.

Potassium nitrate.....	av.oz. 8
Gunpowder.....	av.oz. 8
Sulphur.....	av.oz. 5
Charcoal.....	av.oz. 2
Lampblack.....	av.oz. 1

Mix and fill into paper tubes.

II.

Potassium nitrate.....	av.oz. 8
Sulphur.....	av.oz. 4
Gunpowder.....	av.oz. 4
Charcoal.....	av.oz. 1
Lampblack.....	av.oz. 1

Fire, Green.

I.

Potassium chlorate.....	av.oz. 4
Barium nitrate.....	av.oz. 14
Sulphur.....	av.oz. 5

Boric acid may be substituted for the barium nitrate.

II.

Barium nitrate.....	av.oz. 12
Potassium chlorate.....	av.oz. 4
Shellac.....	av.oz. 4

Boric acid may be substituted for the barium nitrate.

III.

Barium nitrate.....	av.oz. 4
Milk sugar.....	av.oz. 4
Potassium chlorate.....	av.oz. 8

—D.

IV.

Barium nitrate.....	av.oz. 9
Potassium chlorate.....	av.oz. 4
Milk sugar.....	av.oz. 2

V.

Black antimony.....	av.oz. ¼
Sulphur.....	av.oz. 3
Potassium chlorate.....	av.oz. 3
Barium nitrate.....	av.oz. 18

VI.

Potassium chlorate.....	av.oz. 2
Barium nitrate.....	av.oz. 10
Sulphur.....	av.oz. 5

VII.

Arsenic.....	av.oz. ¼
Charcoal, wood.....	av.oz. ¾
Potassium chlorate.....	av.oz. 1¼
Sulphur.....	av.oz. 3
Barium nitrate.....	av.oz. 19

VIII.

Barium nitrate.....	av.oz. 8
Potassium chlorate.....	av.oz. 4
Sulphur.....	av.oz. 1
Antimony sulphide.....	av.oz. ¼
Charcoal.....	av.oz. ¼

Fire, Lilac.

Potassium chlorate.....	av.oz. 6
Shellac.....	av.oz. 8
Chalk.....	av.oz. 8
Black oxide of copper.....	av.oz. 1

Fire, Orange Red.

Chalk.....	av.oz. 8½
Sulphur.....	av.oz. 3½
Potassium chlorate.....	av.oz. 18

Fire, Purple.

I.

Copper sulphide.....	av.oz. 1
Strontium nitrate.....	av.oz. 14
Calomel.....	av.oz. 14
Potassium chlorate.....	av.oz. 15
Shellac.....	av.oz. 5

II.

Black antimony.....	av.oz. ¼
Copper oxide.....	av.oz. 2¼
Sulphur.....	av.oz. 6
Potassium nitrate.....	av.oz. 6
Potassium chlorate.....	av.oz. 12

Fire, Red.

I.

Strontium nitrate.....	av.oz. 12
Shellac.....	av.oz. 8

II.

Strontium oxalate.....	av.oz. 1
Lycopodium	av.oz. 1
Milk sugar.....	av.oz. 4
Potassium nitrate.....	av.oz. 4
Potassium chlorate.....	av.oz. 18

—D.

III.

Strontium nitrate.....	av.oz. 8
Sugar	av.oz. 4
Potassium chlorate.....	av.oz. 1

IV.

Potassium chlorate.....	av.oz. 4
Shellac	av.oz. 4
Strontium nitrate.....	av.oz. 12

V.

Lycopodium	av.oz. 1
Strontium nitrate.....	av.oz. 1
Milk sugar.....	av.oz. 4
Potassium nitrate.....	av.oz. 12

VI.

Charcoal, wood.....	av.oz. ½
Black antimony.....	av.oz. 1
Potassium chlorate.....	av.oz. 1½
Sulphur	av.oz. 2½
Strontium nitrate.....	av.oz. 11

—D.

VII.

Charcoal, wood.....	av.oz. ½
Potassium chlorate.....	av.oz. 1½
Sulphur	av.oz. 8
Strontium nitrate.....	av.oz. 9½

—D.

VIII.

Strontium nitrate.....	av.oz. 16
Potassium chlorate.....	av.oz. 4
Flaxseed, ground.....	av.oz. 4

This is a cheap red fire for parades.

IX.

Shellac	av.oz. 8¼
Strontium nitrate.....	av.oz. 17½
Magnesium metal, powder ..	av.oz. ½

Melt the shellac, add the strontium nitrate; mix well; allow to cool; powder, and add the magnesium.

This makes a slow burning and very brilliant fire.—D.

Fire, Rose.

Potassium nitrate.....	av.oz. 8
Corn meal.....	av.oz. 2
Charcoal	av.oz. ½

Fire, Violet.

I.

Calcium carbonate.....	av.oz. 2
Malachite	av.oz. 2
Sulphur	av.oz. 2
Potassium chlorate.....	av.oz. 6

II.

Alum	av.oz. 8
Potassium carbonate	av.oz. 8
Sulphur	av.oz. 4
Potassium chlorate.....	av.oz. 15

III.

Charcoal.....	gr. 90
Prepared chalk.....	av.oz. 4
Sulphur	av.oz. 4
Potassium chlorate.....	av.oz. 5
Potassium nitrate.....	av.oz. 6

—D.

IV.

Strontium nitrate.....	av.oz. 4
Potassium chlorate.....	av.oz. 9
Sulphur	av.oz. 5
Copper carbonate.....	av.oz. 1
Calomel	av.oz. 1

V.

Potassium nitrate.....	av.oz. 12
Potassium chlorate.....	av.oz. 12
Shellac	av.oz. 8
Chalk	av.oz. 8
Charcoal	av.oz. 1

Fire, White.

I.

Stearic acid.....	av.oz. 1
Barium carbonate.....	av.oz. 1
Milk sugar.....	av.oz. 4
Potassium nitrate.....	av.oz. 4
Potassium chlorate.....	av.oz. 18

—D.

II.

Stearic acid.....	av.oz. 1
Sulphur	av.oz. 1
Black antimony.....	av.oz. 8
Potassium nitrate.....	av.oz. 6

—H.

III.

Potassium nitrate.....	av.oz. 10
Sulphur	av.oz. 8
Orpiment.....	gr. 875

IV.

Black antimony.....	av.oz. 1
Sulphur	av.oz. 4
Potassium nitrate.....	av.oz. 11½

V.

Potassium nitrate.....	av.oz. 16
Charcoal	av.oz. 2
Shellac	av.oz. 4

VI.

Shellac	av.oz. 8
Barium nitrate.....	av.oz. 18
Magnesium metal, powder....	av.oz. 1

To the shellac, melted, the barium is added, and the mixture, when cold, powdered and the metal added.

This makes a very brilliant and slow-burning light.

VII.

Potassium nitrate.....	av.oz. 6
Antimony sulphide.....	av.oz. 2
Shellac	av.oz. 2
Sulphur	av.oz. 1

Fire, Yellow.

I.

Sodium nitrate.....	av.oz. 12
Potassium chlorate.....	av.oz. 4
Shellac	av.oz. 4

II.

Sodium oxalate.....	av.oz. 9
Shellac.....	av.oz. 9
Potassium nitrate.....	av.oz. 11
Potassium chlorate.....	av.oz. 11

Flavor for Tobacco.

Cascarilla bark	gr. 120
Valerian root	av.oz. $\frac{1}{2}$
Tonka bean	gr. 120
Benzoin	gr. 60
Stems Havana tobacco.....	av.oz. 2
Compound spirit of lavender..	fl.dr. 2
Acetic ether.....	fl.dr. 2
Alcohol, sufficient.....	fl.oz. 16

Reduce to a coarse powder, and exhaust with the alcohol, either by maceration or percolation, and lastly add the lavender and ether, and filter through paper.

Flash-Light Powders.

These powders are employed by photographers for taking negatives in imperfectly lighted places, or in the absence of good daylight. When blown into an alcohol flame these powders suddenly flare up, producing an intense actinic light. Finely pulverized magnesium (metal) alone may be used for this purpose; some claiming for this the best results, but it is also combined with gun cotton in the proportion of 2 parts to 1 of the latter. Other combinations of magnesium are also used. Of late, aluminium metal is displacing magnesium, it being more economical and comparatively smokeless, while magnesium produces a dense and persistent smoke.

It must be remembered that these powders are very explosive and must be prepared only in small quantities, as wanted.

I.

Magnesium	av.oz. 3
Potassium permanganate.....	av.oz. 2

—D.

II.

Magnesium powder.....	av.oz. 4
Potassium permanganate.....	av.oz. 4
Barium peroxide.....	av.oz. 2

III.

Magnesium powder.....	av.oz. 3
Antimony sulphide.....	av.oz. 1
Potassium chlorate.....	av.oz. 6

IV.

Aluminium.....	av.oz. 6
Lycopodium	av.oz. 2
Ammonium nitrate.....	av.oz. $\frac{1}{2}$

V.

Aluminium powder.....	av.oz. 2
Sugar	av.oz. $\frac{1}{2}$
Potassium chlorate.....	av.oz. 5

Flavor for Cigars.

Tincture benzoin comp.	fl.oz. $\frac{1}{2}$
Balsam of Peru.....	gr. 60
Castoreum	gr. 30
Tonka beans.....	av.oz. 1
Valerian root	av.oz. $\frac{1}{2}$
Carbonate of magnesia	gr. 120
Alcohol.....	fl.oz. 12
Water	fl.oz. 8

Reduce the valerian, castor and tonka to coarse powder; macerate with the menstruum of alcohol and water for two or three weeks; strain; add the tincture, balsam and magnesia; mix and filter through paper.

Fire Extinguisher.

I.

Potassium nitrate, powder....	av.oz. 15
Sulphur, powder.....	av.oz. 9
Charcoal, powder.....	av.oz. 1
Colcothar of rouge.....	av.oz. $\frac{1}{2}$

Dry them thoroughly, then mix them, and fill into round pasteboard boxes holding 5 pounds. Through an orifice in the side a fuse or quick-match is introduced, which extends some 4 inches inward and about 6 inches outward. The latter end is fastened on the outside of the box, and a strip of red paper pasted upon it, bearing the inscription "light here."

These extinguishers are intended for use in closed rooms, and act automatically. This acts by absorbing oxygen.—D.

Fire Extinguishers, Liquid.

II.

Calcium chloride, crude.....	av.oz. 4
Sodium chloride.....	av.oz. 1
Water.....	fl.oz. 15

The resulting solution is thrown into the

fire by a hand-pump. The burning portions become incrustated and cease to be combustible.—D.

III.

Calcium chloride.....	av.oz. 20
Salt.....	av.oz. 5
Water.....	fl.oz. 75

IV. Fill thin spherical bottles with solution of calcium chloride, ammonium chloride, or borax.

Fireproofing Fabrics, Wood, etc.

While fireproofing materials are used and formulas are here given, it should not be understood that the articles "fireproofed" really cannot burn; the preparation will simply hinder the rapid progress of the fire so as to permit of its easy and rapid extinction.

I. For light fabrics:

Ammonium sulphate.....	av.oz. 4
Ammonium carbonate.....	av.oz. 1½
Borax.....	av.oz. 1
Boric acid.....	av.oz. 1½
Starch.....	av.oz. 1
Water.....	fl.oz. 48

Dissolve the salts, which should be pure and particularly free from iron, in a sufficient quantity of the water. Add the starch, previously made into a jelly, with boiling water. Impregnate the fabric with the solution, dry it and iron it. In place of 1 av.ounce of starch about one-quarter the quantity of gelatin or dextrin may be used.

A quart of the solution will be sufficient for about 16 yards of material.

II. For wood and heavy fabrics, ropes, straw hats, mats, etc., the following is recommended:

Ammonium chloride.....	av.oz. 8
Boric acid.....	av.oz. 8
Borax.....	av.oz. 1
Water.....	fl.oz. 48

Immerse the articles for 15 or 20 minutes in the solution, heated to 100 degs. C.

III. For paper the following may be used:

Ammonium sulphate.....	av.oz. 4
Boric acid.....	av.oz. 1½
Borax.....	av.oz. 1
Water.....	fl.oz. 48

Heat to 50 degs. C., and immerse the paper.

If this mixture be added to starch paste, the latter may be applied to fabrics.—D.

IV.

Sodium tungstate.....	av.oz. 15
Common soap.....	av.oz. 2
Water.....	fl.oz. 80

Dissolve and immerse fabrics in the warm solution.—D.

V.

Ammonium phosphate.....	av.oz. 5
Common soap.....	av.oz. 2
Water.....	fl.oz. 90

Use like the preceding.—D.

VI. For starching curtains:

Sodium tungstate.....	av.oz. 2
Borax.....	av.oz. 2
Starch.....	av.oz. 6

Mix and use like ordinary starch for starching.—D.

VI. For application to stage (theatrical) accessories:

Ammonium chloride.....	av.oz. 10
Calcium chloride.....	av.oz. 8½
Prepared chalk.....	av.oz. 20
Water.....	fl.oz. 60

Dissolve the first two ingredients in water and add the chalk.—D.

VII. For application or coating for wooden implements, partitions, etc.:

Zinc oxide.....	av.oz. 20
Water.....	fl.oz. 10
Solution of sodium silicate.....	sufficient

Mix the zinc oxide, water and 10 av.ounces of the solution to a smooth, mixture then add enough more of the solution to make a thin paint.

This makes a white application, a yellow one may be produced by substituting yellow ochre for the zinc oxide.

When these mixtures are applied they become of strong hardness and resist the elements. They will serve excellently, therefore, for all external as well as internal purposes.—D.

Floor Polish or Wax.

I.

Yellow wax.....	av.oz. 8
Potassium carbonate.....	av.oz. 1
Oil of turpentine.....	fl.oz. 1
Water.....	fl.oz. 32

Heat the wax and water to boiling; add the potassium carbonate; boil another minute; remove the vessel from the fire; add the oil, and stir until cold. If the floor is well pre-

served, 16 fluidounces more of water may be added. A brown color may be produced by adding sienna or umber, and a very dark brown, by the further addition of lampblack.—D.

II.

Yellow waxav.oz. 8
Potassium carbonate.....av.oz. 4
Waterfl.oz. 52

Heat the wax in an iron vessel with 40 fluidounces of water until the wax is melted, then add the potassium carbonate dissolved in the remainder of the water and boil together until solution is effected. If it be desired to color the polish, add $\frac{1}{2}$ to 1 av. ounce of annatto previously dissolved in a little alcohol.—H.

III.

Yellow waxav.oz. 5
Paraffin wax.....av.oz. 2
Stearic acid.....av.oz. 10
Oil of turpentinefl.oz. 6
Benzinfl.oz. 7

Melt together by a gentle heat (waxes and acid), add a sufficient quantity of burnt sienna, thoroughly triturated, with linseed oil varnish. Then add, with a constant stirring (remote from fire), the oil and benzin.—H.

IV.

Yellow waxav.oz. 5
Soapav.oz. 1
Potassium carbonate.....av.oz. $\frac{3}{4}$
Waterfl.oz. 68

First dissolve the soap in 10 fluidounces of water, heating gently, then add the wax, and boil. When the wax begins to come to the surface, add the potassium carbonate dissolved in 10 fluidounces of water; heat for 20 minutes more, and then add the remainder of the water.

V.

Spermacetiav.oz. 4
Paraffin waxav.oz. 4
Talcum, powder.....av.oz. 8

Shave the spermaceti and paraffin quite fine, mix with the talcum, and pass through a No. 10 sieve.

VI.

Stearin, powderav.oz. 20
Yellow wax, powder.....av.oz. 5
Soap, powder.....av.oz. 2

VII.

Stearin, powderav.oz. 16
Yellow wax, powder,av.oz. 4

VIII.

White wax, powder.....av.oz. 10
Shellac, powder.....av.oz. 10
Resin powderav.oz. 1

IX. To about 4 av.pounds of paraffin, melting at about 40 degs. C., add 1 fluid-ounce of oil of mirbane, and allow to cool.

In using melt the wax, and with an old brush sprinkle the melted mixture over the floor.—D.

Flea Exterminators. (Flea Powders and Liquids, or Solutions.)

I.

Castile soap, powder.....av.oz. 8
Starch, powder.....av.oz. 8
Oil of pennyroyal.....fl.dr. 1

II.

Naphthalin, fine powder.....av.oz. 4
Starch, powder.....av.oz. 12

If desired, this mixture may be colored gray by the addition of 10 grains of lamp-black.

III.

Talcum, powder.....av.oz. 2
Zinc oxide.....av.oz. 4
Starch, powder.....av.oz. 10
Oil of eucalyptus.....fl.dr. $2\frac{1}{2}$
Oil of rose geranium.....m. 75

Apply with a powder-puff to the body and bedclothes. The powder should not be kept longer than a week.

IV.

Oil of cloves.....fl.dr. 4
Cologne water.....fl.oz. 5
Alcoholfl.oz. 7

Mix and filter.—H.

V.

Menthol.....gr. 45
Camphor.....gr. 150
Oil of spearmint.....fl.dr. $1\frac{1}{2}$
Oil of wintergreen.....fl.dr. 4
Oil of bergamot.....fl.dr. 4
Oil of cinnamon.....fl.dr. 5
Oil of origanum.....fl.oz. 1
Oil of pennyroyal.....fl.oz. 1
Oil of amber.....fl.oz. 1
Petroleum, crude.....fl.oz. 27

Mix and filter.

VI. An ingenious plan which has been recommended to rid a house of fleas, is the following:

Place on the floor of each room several sheets of sticky fly paper with pieces of fresh meat in the center of each sheet. Jumping for the meat the fleas are caught on the paper,

Fly Exterminators.

Fly exterminators are of different kinds, such as papers, powders, pastilles, etc. The papers which are now so largely employed are of several varieties, viz: sticky, poisonous or arsenical, and non-poisonous. Full directions are given below for making these preparations.

Fly Lime.

What is known as "fly lime," which is sold largely in Europe, consists of the mixtures used in the formulas for sticky fly paper, spreading upon paper. These mixtures are spread upon plates or saucers, which are then set about the room, or are painted upon sticks, which are then hung around in convenient places.

Fly Paper, Arsenical or Poison.

- I.
- | | | |
|-----------------------------------|--------|----|
| Potassium arseniate, crystal..... | av.oz. | 1 |
| Sugar..... | av.oz. | 4 |
| Water..... | fl.oz. | 48 |

Dissolve and saturate heavy unsized paper in the solution; afterward hang it up to dry on strings. The paper should be stamped or printed as poisonous previous to immersion in the liquid. Potassium arseniate should be employed, or this prepared from arsenic acid, instead of the arsenite—the form official in Fowler's Solution. While arsenic acid is more readily partaken of by flies, it has the further advantage of being non-poisonous to the hands.—D.

II.

- | | | |
|--------------------------|--------|-----|
| White arsenic..... | gr. | 120 |
| Potassium carbonate..... | av.oz. | 1 |
| Sugar..... | av.oz. | 4 |
| Water..... | fl.oz. | 32 |

Mix; dissolve, and saturate paper as in the preceding.

Fly Paper, Bichromate.

- | | | |
|---------------------------|--------|----|
| Potassium bichromate..... | av.oz. | 1 |
| Sugar..... | fl.dr. | 3 |
| Oil of black pepper..... | fl.dr. | 1½ |
| Alcohol..... | fl.oz. | 2 |
| Water..... | fl.oz. | 12 |

Mix thoroughly; macerate for several days, and filter off the liquid. In this solution soak unsized absorbent paper, allow to dry, and again soak and allow to dry.

Fly Paper, Cobalt.

- | | | |
|---------------------------------------|--------|----|
| Tartar emetic..... | gr. | 45 |
| Cobalt chloride..... | av.oz. | ½ |
| Quassia chips..... | av.oz. | 7 |
| Tincture of long pepper (1 in 4)..... | fl.oz. | 4 |
| Water..... | fl.oz. | 20 |

Mix, macerate for 7 days, agitating occasionally, and filter. Prepare the paper like the preceding.

Fly Paper, Non-Poisonous.

As a so-called non-poisonous fly paper may be used either the bichromate, cobalt or quassia fly papers.

Fly Paper, Quassia.

- | | | |
|--------------------|------------|---|
| Quassia chips..... | av.oz. | 8 |
| Sugar..... | av.oz. | 4 |
| Water..... | sufficient | |

Pour 32 fluidounces of water over the quassia chips, allow to stand over night, strain and boil the liquid down to 16 fluidounces; then boil the chips with 16 fluidounces of water until 8 fluidounces remain. Mix well together, allow to stand for several days; filter, soak strips of absorbent paper in the filtered liquid and dry the slips.

Fly Paper, Sticky.

- I.
- | | | |
|-------------------------|--------|---|
| Resin..... | av.oz. | 6 |
| Lard oil..... | fl.oz. | 2 |
| Turpentine, Canada..... | av.oz. | 1 |

Melt the resin upon a water bath, add the other ingredients and spread upon paper. The paper should be ordinary printing paper, which has previously been "sized," by applying a coating of a thin solution of white glue by means of a sponge, and hung up to dry. The sticky compound is put on whilst warm by means of a brush, and the paper is then folded together. The proportion of resin must be varied to suit the changes in the temperature.

II.

- | | | |
|-----------------------------|--------|---|
| Resin, in clean pieces..... | av.oz. | 8 |
| Castor oil..... | av.oz. | 4 |
- Prepare like the preceding.

III.

- | | | |
|------------------------|--------|---|
| Resin..... | av.oz. | 8 |
| Venice turpentine..... | av.oz. | 2 |
| Castor oil..... | av.oz. | 2 |

Prepare like the preceding.

IV.

Resinav.oz. 4
Castor oil.....av.oz. 2
Syrupy glucose.....av.oz. 1

Melt the resin, add the castor oil, incorporate the glucose, and spread the mixture upon heavy paraffined paper or upon sized paper.

V.

Resinav.oz. 6
Yellow wax.....gr. 90
Linseed oil.....fl.oz. 4

Melt together and strain. It may be made of a handsome color by adding 45 grains of red saunders.—D.

The wax improves the consistence while its odor, being suggestive of honey, is very attractive to flies. It may be increased, if desired, to 180 grains.

Fly Pastilles.

Potassium nitrate, powder....av.oz. 1½
Mucilage of tragacanth.....fl.oz. 2
Insect powder.....av.oz. 2
Althæa, powder.....gr. 125
Tragacanth, powder.....gr. 125

Intimately mix the potassium nitrate with the mucilage; also mix the other ingredients together, then incorporate the powdery mixture with the paste, divide the whole into pastilles weighing about 30 grains, and dry at a temperature of 20 to 25 degs. C. The pastilles may be bronzed or gilded, if desired.—D.

Fly Pencils.

Eucalyptol (or oil of eucalyptus). fl.dr. 1½
Oil of laurel, essential.....drops 20
Petrolatumav.oz. 2½
Paraffin wax.....av.oz. 2

To the paraffin previously melted the oils should be added and the mixture then molded into sticks.—D.

This is used for penciling the body exposed to the attacks of flies.

Fly Powders.

I.

Long pepper.....av.oz. 4
Quassia.....av.oz. 4
Sugar.....av.oz. 8
Diluted alcohol.....fl.oz. 4

The solids should be in very fine powder, should be well mixed, and then mixed with

the diluted alcohol, dried, and reduced to fine powder.

This powder is employed by sprinkling upon a saucer.—D.

II.

Crude arsenic (so called "cobalt").....av.oz. 12
Sugar.....av.oz. 4

Each should be in fine powder and should be well mixed.

III.

Eucalyptol (or oil of eucalyptus). fl.oz. 1
Orris root.....av.oz. 4
Starch.....av.oz. 15

Reduce the drugs to fine powder and mix with the oil.—D.

Fountains, Charging of.

This table indicates the amounts of sodium bicarbonate and sulphuric acid to be used in charging soda fountains.

To produce a pressure of 8 atmospheres, equalling about 120 pounds to the square inch:

Quantity of water.	of sodium bicarbonate.	of sulphuric acid.
10 gallons	86 av.oz.	50 av.oz.
20 "	122 "	71 "
30 "	161 "	93 "
40 "	198 "	118 "
50 "	236 "	137½ "

For 9 atmospheres—about 135 lbs. to the square inch.

Quantity of water.	of sodium bicarbonate.	of sulphuric acid.
10 gallons	96 av.oz.	55½ av.oz.
20 "	134 "	73 "
30 "	171 "	100 "
40 "	209 "	122 "
50 "	246 "	144 "

The amounts of sulphuric acid are somewhat in excess of the quantity required to decompose the soda.

Freezing Mixtures.

In using freezing mixtures, the salts should be in very fine powder and should be perfectly dry. The vessel should previously be cooled, and cool water should be employed. If the mixture be produced from one salt and water, the former may be recovered by evaporation, and after thorough drying and powdering, it may be used over again. A mixture of salts may be recovered in the same manner and used over again.—D.

I.

Ammonium chloride.....av.oz. 8
 Potassium nitrate.....av.oz. 1
 Potassium chloride.....av.oz. 6

Dry each substance and powder, and then to the mixtures add 10 fluidounces of cool water.

The temperature depression amounts to 30 degs. C.—D.

II.

Ammonium chloride.....av.oz. 3
 Potassium nitrate.....av.oz. 3
 Sodium sulphate, in small crystals.....av.oz. 5

Dry the ammonium and potassium nitrate, reduce to powder, add the sodium sulphate, and then mix with 11 fluidounces of cold water.

The temperature depression amounts to 25 degs. C.—D. and H.

III.

Ammonium nitrate, powder.....av.oz. 10
 Cold water.....fl.oz. 10

The temperature depression amounts to 30 degs. C.—D.

IV.

Sulphuric acid.....fl.oz. 10
 Water.....fl.oz. 9
 Sodium sulphate, powder.....fl.oz. 5

Mix the acid and water, allow the mixture to cool to the temperature of the atmosphere, and add the sodium sulphate.

V.

Sodium sulphate.....av.oz. 8
 Hydrochloric acid.....fl.oz. 5

VI.

Ammonium nitrate.....av.oz. 4
 Sodium carbonate.....av.oz. 4
 Water.....fl.oz. 4

VII.

Ammonium chloride.....av.oz. 2
 Potassium nitrate.....av.oz. 2
 Water.....fl.oz. 6

Depresses temperature from 10 degs. C. to 112 degs. C.—H.

VIII.

Nitric acid, commercial.....fl.oz. 2
 Water.....fl.oz. 2
 Sodium sulphate, crystal.....av.oz. 6

Mix the acid and water, allow to cool, and add the sodium sulphate.

It depresses temperature from 10 degs. C. to 125 degs. C.—H.

IX.

Zinc sulphate.....av.oz. 4
 Muriatic acid.....fl.oz. 4

The temperature depression is from 10 degs. C. to 17 degs. C.—H.

Fuller's Earth, Improved.

Equal parts fuller's earth and talcum. Mix and perfume.

Fungicides.

The term fungicide signifies an agent to destroy fungi or lower forms of parasites. The particular parasites referred to in this connection are such as attack plants, for example, blights, rots, smuts, mildew, etc. Some of the formula under the heading "Insecticides for Agriculturalists," may also be employed as fungicides.

I.

Potassium sulphide(sulphurated potassa).....av.lb. 1
 Water.....gal. 30

Dissolve the potassium sulphide in the water, and use. This formula is very efficient for gooseberry and currant mildew. Two or 3 ounces of paris green may be added to each 30 gallons of this mixture.

II.

Copper sulphate.....av.lb. 2
 Water.....gal. 45

Dissolve the sulphate in the water, and use. This solution should never be applied to green foliage. Its proper use is as an early spring wash for the trunk and branches of trees and vines to remove lichens and kill disease spores. Four or 6 ounces of paris green may be added to each 45 gallons of the above solution. For stone fruits use only 2 or 3 ounces of paris green.

III.

Copper carbonate.....av.oz. 6
 Ammonium carbonate.....av.lb. 2
 Or, ammonia water.....fl.oz. 82
 Water.....gal. 45

Dissolve the ammonium carbonate in half a gallon of boiling water and pour it upon the copper carbonate. Shake or stir vigorously until all is dissolved. If the ammonia water is used, simply pour it upon the copper carbonate in the same way. Dilute to 45 gallons, and use at once. If kept tightly corked, the undiluted solution will keep for a long time. This is a very efficient fungicide,

adheres well to the foliage, and does not spot the fruit. It should not be used upon the peach, plum or cherry. Arsenites should not be added to this solution.

IV.

Copper sulphate.....	av.oz.	6
Fresh lime (or sodium carbon- ate).....	av.lb.	4½
Molasses	fl.oz.	32
Water.....	gal.	45

Dissolve the copper sulphate in sufficient water, using a non-metallic vessel. Use good stone lime, well burnt. Slake the lime or dissolve the soda in 2 gallons of water in a separate vessel. Dilute the molasses with a gallon of water, and stir it into the lime wash or soda solution. After these have been thoroughly mixed add the whole, with vigorous stirring, to the copper sulphate solution. The mixture thus produced should be diluted to 45 gallons and used at once, as it deteriorates on standing. For the earlier treatments, or where the disease is bad, less water may be used, but, as a rule, the full amount will be best. For peach and plum foliage the mixture should never be made stronger than indicated. For the earlier treatments it will be better to use lime instead of soda, and to destroy insects, add to each 45 gallons 8 or 4 ounces of paris green or london purple. The latter arsenite cannot be safely used in the soda mixture. But this has the advantage of not staining the fruit. When an arsenite is used, it should be added to the lime and molasses solution before this is added to the copper sulphate. This mixture is very adhesive to the foliage, and fewer treatments will be required than when the plain Bordeaux mixture is used.

Eau Celeste.

Copper sulphate.....	av.lb.	11
Water.....	pints	38
Ammonia water.....	pints	11

Eau Celeste, Modified.

Copper sulphate.....	av.lb.	4
Sodium carbonate.....	av.lb.	5
Ammonia water.....	pints	8
Water.....	gal.	45

Dissolve the copper sulphate in sufficient water, using a non-metallic vessel. Dissolve the soda in sufficient water in a separate vessel. Mix these two and then add the am-

monia. Dilute to 45 gallons and use within half a day. It does not keep well. This is a very acrid mixture, and in the hands of careless persons may do much damage to the foliage. It should never be used upon the peach, plum or cherry. It gives best results upon the apple. It does not stain the fruit. Arsenites cannot be safely added to this mixture.

Bordeaux Mixture.

Copper sulphate.....	lb.	6
Fresh lime.....	lb.	6
Water.....	gal.	45

Dissolve the copper sulphate in a wooden or earthen vessel, using 4 or 5 gallons of water, which, if hot, will act quicker. In a separate vessel slake the lime and rub until all lumps are broken. Then strain and stir slowly into the copper solution. Dilute and use as soon as possible. The mixture should not stand over 20 hours, as it tends to spoil. Where a good quality of lime is used, 4 pounds will satisfy 6 pounds of copper sulphate, but it is best to use plenty of lime, as any free sulphate will burn the foliage. Four ounces of paris green may be added to each 45 gallons of this liquid for all except peach and other stone fruits. For these use only 2 ounces. This makes the best and safest combined insecticide and fungicide for general use. Its chief disadvantage is its spotting the fruit and its liability to be washed off the foliage by rains.

Furs, Preserving of.

Carbolic acid.....	fl.dr.	6
Oil of cloves.....	fl.dr.	8
Oil of mirbane.....	fl.dr.	8
Oil of lemon.....	fl.dr.	½
Alcohol.....	fl.oz.	32

Mix and dissolve.

The articles are moderately sprinkled with the fluid. One sprinkling will suffice for the summer, provided they are stored in closed boxes or closets, but cloth in storerooms will require to be sprinkled twice.

Furniture Cream.

I.

Potassium carbonate.....	av.oz.	1
Soft or green soap.....	av.oz.	2
Yellow wax.....	av.oz.	8
Water.....	fl.oz.	64

Mix and boil the whole until a uniform cream results.

II.

Yellow wax.....av.oz.	8½
Potassium carbonate.....gr.	160
Oil of turpentine.....fl.dr.	2½
Oil of lavender.....m.	80
Water.....	sufficient

Boil the wax with 16 fluidounces of water over a direct fire, and add to the hot liquid the potassium carbonate. Now remove from the fire, add the two oils, stir until cool, and add enough water to make 32 fluidounces.

In using this cream, apply lightly on a woolen cloth, and then rub with a piece of linen until the furniture has acquired a polish.—D.

III.

White castile soap.....gr.	270
White wax.....av.oz.	4½
Oil of turpentine.....fl.oz.	21
Water.....fl.oz.	9
Potassium carbonate.....gr.	270

Melt the soap in water with the aid of a gentle heat, then add the potassium carbonate and white wax. When thoroughly melted, add gradually the turpentine, and shake thoroughly.

IV.

Yellow wax.....av.oz.	4
Yellow soap.....av.oz.	2
Water.....fl.oz.	40
Linseed oil.....fl.oz.	4
Oil of turpentine.....fl.oz.	4

Mix the wax, soap and water; boil until of the proper consistence, and add the oils.

V.

Yellow wax.....av.oz.	3
Linseed oil, boiled.....fl.oz.	16

Dissolve the wax in the oil by the aid of heat.

VI.

Yellow wax.....av.oz.	3½
Castile soap.....gr.	60
Oil of turpentine.....fl.oz.	10
Water, boiling.....fl.oz.	10
Potassium carbonate.....gr.	60

Melt the wax, add the oil, dissolve the soap and potassium carbonate in the water, and mix the two liquids, stirring until cold.

Furniture Paste.

Yellow wax.....av.oz.	4
Alkanet, coarse powder.....av.oz.	½
Oil of turpentine.....fl.oz.	16

Macerate the alkanet in the oil for 24 hours, strain and add the colature to the wax

previously melted. The alkanet may be omitted, if desired.

II.

Venice turpentine.....av.oz.	6
Linseed oil.....fl.oz.	16

Mix by the aid of heat. The mixture may be colored like the preceding by means of alkanet root.

III.

Yellow wax.....av.oz.	16
Linseed oil, raw.....fl.oz.	4
Oil of turpentine.....fl.oz.	4
Alkanet root.....av.oz.	½

Mix the wax, linseed oil and alkanet, heat moderately until sufficiently colored, then remove from the fire, and add the oil of turpentine.

IV.

Yellow wax.....av.oz.	8
Oil of turpentine.....fl.oz.	9

Melt the wax, and add the turpentine. When the mixture has solidified it may be cut into rectangular pieces.

In using, the paste should be rubbed over the furniture, after which a cloth moistened with oil of turpentine should be passed over the latter, and the polishing finished by friction with a soft brush.—D.

Furniture Polish, Liquid.

I.

Linseed oil, raw.....fl.oz.	32
Alcohol.....fl.oz.	8
Diluted acetic acid.....fl.oz.	8
Oil of turpentine.....fl.oz.	8
Solution of antimony chloride.....fl.oz.	2

II.

Linseed oil, raw.....fl.oz.	40
Alcohol.....fl.oz.	4
Diluted acetic acid.....fl.oz.	16
Solution of antimony chloride.....fl.oz.	2
Ammonium chloride.....av.oz.	1
Spirit of camphor.....fl.oz.	1

Add first the antimony solution, then the spirit of camphor and acid, and lastly the ammonium chloride to the oil, and shake well after each addition.

III.

Alcohol.....fl.oz.	10
Linseed oil, raw.....fl.oz.	10
Sandarac.....gr.	120
Diluted acetic acid.....fl.oz.	5
Nitric acid.....fl.dr.	4

Mix and dissolve.

IV.

Linseed oil, raw.....	f.oz. 12
Alcohol.....	f.oz. 4
Diluted acetic acid.....	f.oz. 4
Hydrochloric acid.....	f.oz. 1
Spirit of lavender.....	f.dr. 4

V.

Linseed oil, raw.....	f.oz. 16
Diluted acetic acid.....	f.oz. 6
Solution of antimony chloride.....	f.oz. 2
White resin.....	av.oz. ¼

Mix and dissolve by agitation.

VI.

Oil of turpentine.....	f.oz. 16
Linseed oil, raw.....	f.oz. 16
White resin.....	av.oz. 2
Alcohol.....	f.oz. 2
Nitric acid.....	f.oz. 1

Mix and dissolve by agitation.

VII.

Linseed oil, raw.....	f.oz. 12
Oil of turpentine.....	f.oz. 4
Diluted acetic acid.....	f.oz. 4
Hydrochloric acid.....	f.oz. 1
Alcohol.....	f.oz. 1
Acacia, powder.....	av.oz. 1

VIII.

Linseed oil, raw.....	f.oz. 12
White of 2 eggs.....	
Old ale.....	f.oz. 10
Solution of antimony chloride.....	f.oz. 1

IX.

Shellac.....	av.oz. 4
Resin.....	av.oz. 2
Venice turpentine.....	av.oz. ¼
Alcohol.....	f.oz. 12

Mix and shake occasionally until dissolved, then set aside in a warm place for a few weeks and filter.

X.

Resin of guaiac.....	av.oz. 1
Benzoin.....	av.oz. 1
Shellac.....	av.oz. ¼
Linseed oil, raw.....	f.dr. 10
Benzin.....	f.dr. 4
Alcohol, or wood alcohol.....	f.oz. 24

Mix and dissolve.

The polish is applied with a sponge or brush, and the object is, let stand for a half hour. A linen cloth moistened with oil is then used as a rubber, and a brilliant polish is obtained which is said to be very lasting and is unaffected by water or any substances which usually injure varnish.

XI.

Oil of turpentine.....	f.oz. 5
Oil of amber.....	f.oz. 5
Olive oil.....	f.oz. 5
Oil of lavender.....	f.dr. 2

A cotton rubber is saturated with this polish, which is thus applied to the wood. The latter is then well rubbed with soft dry cotton rags and wiped dry.

XII.

Shellac.....	av.oz. 1
Resin.....	av.oz. 1
Alcohol.....	f.oz. 8
Oil of turpentine.....	f.oz. 2
Linseed oil, raw.....	f.oz. 8
Aniline red.....	gr. 8

Dissolve the shellac in the alcohol and add the aniline. Dissolve the resin in the oil of turpentine, add the linseed oil, and mix the two solutions.

XIII.

Linseed oil, raw.....	f.oz. 4
Oil of turpentine.....	f.oz. 4
Kerosene.....	f.oz. 16
Oil of amber.....	f.oz. 1

XIV.

Linseed oil, raw.....	f.oz. 12
Diluted acetic acid.....	f.oz. 3
Oil of turpentine.....	f.oz. 1½
Muriatic acid.....	f.oz. 8

XV.

Linseed oil.....	f.oz. 16
Alkanet root.....	av.oz. ¼

Digest together for some time, and strain.

XVI.

Shellac.....	av.oz. 2
Alcohol.....	f.oz. 16
Linseed oil, raw.....	f.oz. 16
Oil of turpentine.....	f.oz. 8
Ether.....	f.oz. 2
Ammonia water.....	f.oz. 4

Dissolve the shellac in the alcohol and add the other ingredients.

XVII.

Alcohol.....	f.oz. 4
Oil of turpentine.....	f.oz. 2
Damar varnish.....	f.oz. 1
Linseed oil, raw.....	f.oz. 8
Acetic acid.....	f.oz. 1

XVIII.

Oil of turpentine.....	f.oz. 8
Oil of amber.....	f.oz. 8
Cottonseed oil.....	f.oz. 8

Gilding Powder.

Gold, chloride.....	av.oz.	1
Potassium cyanide.....	av.oz.	3
Potassium bitartrate.....	gr.	110
Prepared chalk.....	av.oz.	5

Mix the ingredients intimately; add water to make a paste; rub with a bit of flannel. The surface must, of course, be thoroughly cleaned.

By substituting silver nitrate for the chloride of gold, a silvering powder will be obtained. To be employed in the same manner.

Glass, Cutting of.

The following may be used for cutting glass, bottles, flasks, etc.:

Charcoal, wood.....	av.oz.	1
Potassium nitrate.....	gr.	10
Tragacanth.....	gr.	10
Benzoin.....	gr.	5

Reduce each to fine powder, add enough mucilage of tragacanth to form a mass, and roll this out into cylinders of about the thickness and length of a lead pencil.

One end of this cylinder may be ignited and passed over the flask, bottle, etc., wherever the crack or cut is to be made.

Instead of the above, the following may be employed:

Dissolve 1 av.ounce of lead acetate in 7 fluidounces of water; saturate blotting paper with this solution, then dry, cover one surface of the paper with paste containing 10 per cent of potassium nitrate, roll this lightly over a knitting needle and dry. This may be used like the preceding.

Glass, Mirrors, etc., Polish for.

Moisten calcined magnesia with pure benzin so as to form a paste sufficiently wet that when pressed some of the benzin will exude. The articles are cleansed by taking this mixture on cotton (not cotton cloth) and rubbing over the glass until dry and all powder is rubbed off.

See also "Window Polishing Paste."

Glove Cleaner.

See also "Benzin Jelly," "Cleansing Cream," "Cleansing Liquid," "Stains, Removal of," "Gloves, Dry Process for Cleaning," etc.

I.

Solution of chlorinated soda....	fl.oz.	12
Ammonia water.....	fl.oz.	1
Soap, powder.....	av.oz.	15
Water.....	fl.oz.	20

Make into a soft paste, and rub on the gloves with a flannel.

II.

Oil of turpentine.....	fl.oz.	5
Benzol.....	fl.oz.	10

III.

Castile soap, shavings.....	av.oz.	12
Water, hot.....	fl.oz.	8
Solution of chlorinated soda....	fl.oz.	8
Water of ammonia.....	fl.dr.	4

Dissolve the soap in the water, allow to cool, and incorporate with the solution and ammonia so as to form a smooth paste.

In using, rub a small portion over the glove by means of a piece of flannel, always rubbing in one direction until clean.

Gloves, Dry Process for Cleaning.

Put the gloves on a clean board, make a mixture of dry powdered fuller's earth and powdered alum, and apply the powder to both sides of the glove with an ordinary stiff brush. Then wipe the powder off, cover the glove with dry bran and brush this off. The gloves, if not very badly soiled, will, by this process, become entirely clean.

Should there be grease stains, remove them with crumbs of toasted bread and powdered animal charcoal, and then rub the glove with a clean woolen rag dipped into the powder of fuller's earth and alum.

Glue, Bookbinder's.

Glue, best.....	av.oz.	7
Glycerin.....	fl.oz.	16
Water.....		sufficient

Pour on the glue more than enough water to cover, allow to macerate for several hours, then decant the greater portion of water; apply heat until the glue is dissolved, and add the glycerin. If the mixture is too thick, more water may be added. It may be colored by means of an aniline dye dissolved in alcohol.

Glue, Liquid.

The making of so-called "liquid glue" depends on the fact that when gelatin or glue is mixed with certain substances in

the presence of water, the mixture remains permanently semi-liquid. The most common agents used in this liquefying process are acetic and nitric acids, lime and other substances also being used.

The cheaper kinds are made from glue, the better and handsomer preparations are made from gelatin.

I.

White glue, broken into small piecesav.oz. 2
Acetic acid.....av.oz. 8
Nitric acid.....drops 10

Mix and keep in a wide-mouthed vial, well corked.

Mix the glue and acetic acid in a wide-mouth stoppered bottle; set in a warm place, agitate frequently until dissolved, and then add the nitric acid.

II.

Glueav.oz. 4
Water.....fl.oz. 10
Nitric acid.....fl.dr. 4

Boil together for several hours.

III.

Glueav.oz. 12
Alumgr. 50
Acetic acid.....fl.oz. 1
Water.....fl.oz. 18
Alcoholfl.oz. 8

Mix all but the alcohol, digest on a water bath till the glue is dissolved, allow to cool, and add the alcohol.

IV.

Glue, white or brown.....av.oz. 5½
Acetic acid.....fl.oz. 5½
Carbolic acid.....drops 5
Water.....sufficient.

Macerate the glue in 6 fluidounces of water for 12 hours, heat the mixture on a water bath until the glue is dissolved, add to the solution the two acids, and then enough water to make 16 fluidounces.

V.

Chloral hydrate.....av.oz. 5
Gelatin.....av.oz. 8
Water.....fl.oz. 20

Mix; let stand for 48 hours, and decant the clear liquid.

VI.

Glue, best white.....av.oz. 4
Lead carbonate.....av.oz. 1
Alcoholfl.oz. 8
Water.....fl.oz. 24

Dissolve the glue by means of a water bath in the water, then incorporate the lead compound and the alcohol, and bottle while warm.

VII. This preparation has been called "Syndeticon":

Slaked lime.....av.oz. 4
Sugar.....av.oz. 6
Water.....fl.oz. 18
Glue.....av.oz. 6

Dissolve the lime and sugar in the water heated to 75 degs. C., decant the clear liquid, add the glue, and, after allowing to swell, again apply heat until dissolved.

VIII. This is similar to the preceding, the proportions only differing:

Sugarav.oz. 5
Glue, best brown.....av.oz. 12
Lime, slaked.....av.oz. 1½
Water.....fl.oz. 15
Oxalic acid.....sufficient
Carbolic acid.....drops 10

In a flask dissolve the sugar in the water, add the lime, and warm the mixture to a temperature of about 75 degs. C. for 3 days, agitating frequently; then allow to cool, decant the clear liquid, and to 8 fluidounces of this liquid add the glue, previously reduced to small pieces; allow to macerate for 8 hours, and then heat in a covered vessel on a water bath for 10 hours, replace the water lost by evaporation, neutralize the lime with oxalic acid, and then add the carbolic acid.—D.

IX. This preparation is also known as "Syndeticon":

Calcium chloride.....av.oz. 1
Water.....fl.oz. 1
Glue, best brown.....av.oz. 5

Dissolve the calcium chloride in the water, add the glue, macerate until the latter is thoroughly softened, and then heat until completely dissolved.—D.

X.

Solution of sodium silicate....av.oz. 10
Sugar, powder.....av.oz. 3
Acacia, powder.....av.oz. 1

Mix well, adding some water if necessary.

Glue, Stick. (Pocket Glue.—Elastic Glue.—Mouth Glue.)

See "Stick Mucilage."

Glucose.—(Grape Sugar or "Starch Syrup")

Is in the market as a solid and liquid. The latter is a variable mixture of grape sugar and dextrine in water.

Grafting Wax.**I.**

Resin	av.oz. 16
Beef tallow	av.oz. 1
Oil of turpentine	fl.dr. 4
Alcohol	fl.oz. 5

Melt the resin, add the tallow, stir until homogeneous, remove from the fire, allow to cool somewhat, and add the oil and alcohol, little by little, stirring well with each addition. If in adding the alcohol there is a tendency to lump, carefully warm the mixture until it melts.

It should be kept in closely stoppered bottles, and when used warmed up slightly (if not in a liquid condition or, say, the consistency of molasses). Apply with a brush. A very thin coat only is needed.

II.

Pitch	av.oz. 2
Resin	av.oz. 2
Yellow wax	av.oz. 1
Lard	av.oz. 1

III.

Yellow wax	av.oz. 2
Resin	av.oz. 2
Gum turpentine	av.oz. 2

Guano, Artificial.

Sodium sulphate, dried	av.lb. 1½
Common salt	av.lb. 12
Wood ashes	av.lb. 4
Ammonium sulphate, common	av.lb. 16
Bone dust	bushel 1

Gun Barrels, Staining of.**I. A.**

Solution of iron chloride	fl.oz. 1
Corrosive sublimate	gr. 180
Copper sulphate	gr. 180
Fuming nitric acid	fl.dr. 2
Distilled water	fl.oz. 10

Mix and dissolve.

B.

Potassium sulphide	gr. 50
Distilled water	fl.oz. 10

Mix and dissolve.

Clean off the gun barrel with emery paper, then by means of a sponge or soft hair brush, apply solution A, subsequently drying

in a cool place, so that it may occur rather slowly. Repeat this application and drying twice, or oftener if necessary to secure the shade of stain desired, rubbing over thoroughly before each application with a scratch brush. When the metal is stained deeply enough, lay the barrel in solution B for 20 or 30 minutes, then wash with warm water, and finally with soap water. Then dry and rub over with linseed oil varnish.

Better results will be attained by stoppering closely the gun barrel at both ends by means of corks, and laying for at least 30 minutes in each of the baths, which have previously been warmed.—D.

II. A.

Fuming nitric acid	fl.dr. 2
Distilled water	fl.oz. 16

B.

Silver nitrate	gr. 80
Distilled water	fl.oz. 16

Rub off the gun barrel with emery paper, then by means of a sponge or soft hair brush apply solution A, dry in a cool place, and rub off with a cloth. Repeat this application, drying and rubbing off until a handsome oxidized surface is produced. Then apply solution B repeatedly, with subsequent exposure to light, until the gun barrel is dark enough, and then anoint with linseed oil varnish.—D.

Gutta Percha, Purified.

Gutta percha	av.oz. 8
Carbon disulphide	fl.oz. 40
Alcohol	fl.oz. 108
Distilled water	fl.oz. 25

Soften the gutta percha in lukewarm water; then pull to pieces, dissolve it in the carbon disulphide, set the mixture aside for 24 hours, filter through glass wool into a suitable vessel containing 60 fluidounces of alcohol. Agitate the whole together, and set aside until the mixture separates into two layers. Decant the upper alcoholic layer, wash the residue with the remainder of the alcohol in the same manner, decant as before; add the water, transfer the mixture to a retort, and distill off the carbon disulphide. Owing to the inflammability of the latter, the utmost precaution must be taken to avoid ignition of its vapors. Finally, wash the

residual mass by kneading in water, then express the latter, and dry in thin sticks.

The product weighs about 5 to 6½ av. ounces.—D.

Hardwood Filler.

Use boiled oil and enough corn starch to make a very thick paste. Add a little japan, and reduce with turpentine. Add no color for white oak; for dark ash and chestnut use a little raw sienna; for walnut, burnt umber and a very little venetian red; for baywood, burnt sienna. Use enough color to cover the white of the starch. Apply with brush and rags, let dry 48 hours, then sandpaper. For second coat use less oil but more japan and turpentine.

Harness Blacking, Polish or Oil.

These preparations are similar to shoe dressings and blackings, and some of the preparations to be found in this part under the latter heading may be made to serve the purpose of harness polishes.

I.

Glue	av.oz.	4
Acacia	av.oz.	2
Diluted acetic acid	fl.oz.	24
Black ink	fl.oz.	8
Isinglass	gr.	120

Soften the glue by standing in 16 fluid-ounces of acid, dissolve the gum in the ink, and the isinglass in a little warm water. Add the rest of the acid to the glue solution, then warm it until solution is obtained; add the gum and ink, and next the isinglass. When all is warm and thoroughly mixed, remove from fire.

In using, warm enough to liquefy, and then apply by means of a sponge.

II.

Mutton suet	av.oz.	2
Yellow wax	av.oz.	6
Powdered sugar	av.oz.	4
Yellow soap	av.oz.	2
Lampblack	av.oz.	1
Indigo	av.oz.	4
Water	fl.oz.	4
Oil of turpentine	fl.oz.	4

Dissolve the soap in the water, add the other ingredients (except the turpentine) melt and mix well together; finally, add the turpentine. The mixture is applied on the harness with a sponge, and polished with a brush.

III.

Black aniline	gr.	35
Muriatic acid	m.	50
Bone black	gr.	175
Lampblack	gr.	18
Yellow wax	av.oz.	2½
Oil of turpentine	fl.oz.	22

—H.

IV.

Oil of turpentine	fl.oz.	8
Yellow wax	av.oz.	2
Prussian blue	av.oz.	¼
Lampblack	av.oz.	¼

Melt the wax, add the turpentine, a portion first to the finely powdered prussian blue and lampblack, and thin with neatsfoot oil.

Hectograph Masses.

Hectographs, also known as copygrams, copygraphs, chromographs, collographs, etc., are employed for the purpose of duplicating writing by taking an impression of writing made with a suitable aniline ink on a receiving pad made essentially from gelatin or glue and glycerin and then obtaining copies by laying fresh sheets of paper upon the pad.

The following formula will make a good pad. The directions with regard to air bubbles, pouring of the mass, etc., must be followed strictly in the succeeding formulas:

Take a pound, or any convenient quantity of pure white glue, free from whitening or other insoluble matter, and macerate in water, until it becomes soft and pliable. With a little manipulation and turning, this may be accomplished by using a pint of water for each pound of glue. Drain off the excess of water, if there be any, and add glycerin in the quantity of from two to three pints for each pound of glue used. The lesser amount is for summer, and the larger amount for winter use. Heat the mixture gently until the glue is dissolved, and the water absorbed by the glue has evaporated. The easiest way of ascertaining when this is accomplished is to take the weight of the evaporating dish out before commencing; then when the weight of the dish and its contents is equal to its tare and the amounts of glue and glycerin used, the operation may be considered completed. If the water is not driven off, the pad is likely to crack in a dry atmosphere by its spontaneous evaporation.

It will be found somewhat troublesome to avoid air bubbles in the mass. They may be avoided to an extent by the use of only moderate heat in dissolving the gelatin. When bubbles have formed, they may be skimmed off, but it is easier to destroy them by the use of alcohol. The mass when finished is strained into a wide mouthed bottle and allowed to stand in a warm place, or in warm water for an hour or two, when most of the bubbles will have arisen to the top and formed a scum on the surface. A small quantity of alcohol is now poured carefully down the side of the bottle, which instantly destroys them all. The gelatin, which is precipitated by the alcohol on the surface, re-dissolves as the alcohol evaporates. When this has occurred, the mass may be poured into a suitable shallow tray, holding the mouth of the bottle as near the tray as possible, to avoid the formation of fresh bubbles. The tray may be made by any tinner and should be as large as the largest paper on which copies are to be taken. It should be about $\frac{1}{2}$ inch deep. To secure firmness, it should be fastened to a board. The melted mass may now be poured, as described, to nearly fill the tray; any air bubble which forms must be removed with a hot wire or other suitable means, and when cold the pad or hectograph is ready for use.

It is difficult to obtain a pad absolutely free from bubbles and one which is not sticky. To avoid the latter, various insoluble powders, sometimes soluble salts, are added to the hectograph mass. The former include clay, chalk, sulphur, barium sulphate, etc.; the latter potassium and other chromates. The former must be rubbed to a smooth paste with a portion of the melted mass before adding to the remainder of the mass; the latter must be dissolved in the smallest amount of water before adding to the remainder of the mixture.

The *modus operandi* of taking copies is as follows:

Write upon the paper with a suitable ink, allow it to remain for a minute or so to dry partially, then invert carefully upon the pad and press evenly and uniformly. In a minute or two, sufficient ink will have been absorbed by the pad from the paper so that new sheets

of paper, pressed upon the pad, will receive duplicates of the original writing. The number of copies that may be taken in this way, as well as their distinctness, varies according to the pad and the ink. The original writing, if laid upon a fresh pad or a fresh portion of the same pad after taking the first imprint, will furnish still other copies. After all the copies are taken, the pad should be cleansed with a moist sponge. A trifling amount of ink will remain in the pad, but this will not interfere with subsequent operations. The copies are sometimes improved by moistening the copying paper with water or strong alcohol, and then absorbing the excess of liquid between folds of bibulous paper.

Hectograph inks are mentioned under heading "Inks."

The hectograph mass, instead of being poured into a tray, may be formed into roller by casting in a mold. Copies may be taken by passing the roller over the writing and then over the paper to receive the copies.

The following mixtures may be formed into hectograph pads, as described above:

I.

Gelatin.....	av.oz. 4
Glycerin	fl.oz. 30
Potassium bichromate.....	gr. 60

II.

Gelatin.....	av.oz. 4
Water	fl.oz. 15
Glycerin	fl.oz. 15
White clay (Kaolin).....	av.oz. 2

III.

Gelatin.....	av.oz. 1
Molasses	av.oz. 1
Glycerin	fl.oz. 9
Water.....	sufficient

IV.

Glue.....	av.oz. 7
Glycerin	fl.oz. 30
Carbolic acid.....	fl.oz. $\frac{1}{2}$
Sulphur.....	gr. 60

The glue should be soaked in water several hours before it is melted with the glycerin. Barium sulphate is also used as an addition.

V.

White glue.....	av.oz. 6
Glycerin	fl.oz. 32
Dextrin.....	av.oz. 2
Precipitated sulphur, pure....	av.oz. $\frac{1}{4}$
Water.....	sufficient

VI.

Isinglass.....	av.oz. 4
Glycerin	fl.oz. 24
Water.....	fl.oz. 16

Mix; macerate for a few hours, and then warm sufficiently to dissolve.

VII.

Gelatin	av.oz. 4
Dextrin	av.oz. 4
Glycerin	fl.oz. 32
Water,	
Barium sulphate.....	of each, sufficient

Use the latter sufficient to make the mass of proper body.

VIII.

Good ordinary glue	av.oz. 10
Glycerin	fl.oz. 4
Kaolin or barium sulphate	av.oz. 2½
Water.....	sufficient

IX.

Best furniture glue.....	av.oz. 4
Water	fl.oz. 8
Glycerin.....	av.oz. 14

Soak the glue in the water until soft, stirring frequently meanwhile; then add the glycerin, and heat on a water bath, with gentle stirring, until the mixture weighs 10 av. ounces.

X.

Gelatin.....	av.oz. 4
Dextrin.....	av.oz. 1½
Sugar.....	av.oz. 2
Water.....	fl.oz. 10
Glycerin	fl.oz. 12
Zinc oxide.....	av.oz. 1½

Horn and Ivory Black, to Color.

First place the horn in an aqueous solution of a lead salt, with a slight excess of sodium hydrate. The duration of this treatment depends on the character of the horn and the strength of the solution—generally half an hour is sufficient. Then wash well and introduce the horn into a solution of 350 grains of wool black and 18 grains of naphthol yellow S in 1 pint of water at 40 degs. C. A longer subjection to this latter treatment appears to be necessary.

For bone and ivory, water-soluble nigrosin will answer. It is only necessary to lay the pieces, previously deprived of fat and mordanted, in a hot aqueous solution of nigrosin until the desired tone is obtained. On account of its cartilaginous components,

ivory cannot be boiled in the nigrosin solution, but the same result can be obtained by allowing it to stand for some hours in a concentrated solution at a temperature of about 80 degs. C.

To deprive the bones of fat before treatment with aniline colors it is sufficient to boil them with frequent changes of water; subsequent treatment with ether being unnecessary.

Kellermann's method of mordanting is especially recommended. This consists of placing the defatted bones for fifteen minutes in the following:

Nitric acid, concentrated	fl.oz. 1
Water	fl.oz. 21
Tartaric acid.....	gr. 120

They are then washed and placed in a solution of 7 grains of zinc chloride in 1 pint of water with a few drops of hydrochloric acid.

With ivory it is sufficient to mordant for 15 minutes in 1 per cent hydrochloric acid.

Incense. (Balsamic Fumigation.)

I.

Benzoin	av.oz. 2
Olibanum	av.oz. 8
Myrrh	av.oz. 8
Cascarilla.....	av.oz. 1½
Oil of lavender flowers.....	drops 5
Oil of bergamot.....	drops 10
Oil of cloves.....	drops 5
Oil of cinnamon.....	drops 4

II.

Olibanum	av.oz. 7
Benzoin	av.oz. 2
Cascarilla.....	av.oz. 1

III.

Olibanum	av.oz. 4
Benzoin	av.oz. 1
Liquid styrax.....	av.oz. 1
Rose petals.....	av.oz. 1
Lavender flowers.....	av.oz. 1

IV.

Amber	av.oz. 8
Mastic	av.oz. 3
Olibanum	av.oz. 3
Benzoin	av.oz. 1
Storax.....	av.oz. 1
Camphor.....	gr. 60

Inks.

The characteristics of a good writing ink are as follows:

1. It must flow easily from the pen, but not drop from it nor spread on the paper;

2. It should not contain finely suspended matter which will subside in the course of time, but should be perfect solution;

3. The color should be dark, and therefore practically saturated, and writing made with it should not fade;

4. It should not mold, nor be liable to other decomposition;

5. It should copy or it should not, as may be desired, and,

6. It should not appreciably attack or corrode steel pens.

Black writing inks are frequently classed according to their use, as follows:

1. Office or document inks, which must be prepared from nutgall or tannin, should be permanent, and are intended for documents which are to be preserved;

2. Copying inks, which are prepared from nutgall, tannin, logwood, or even coal tar dyes, and which must furnish good copies, and

3. Ordinary writing inks, such as are employed as house and school inks, and which should be cheap and from which no special permanence is expected.

According to composition, inks may be classified into

1. Aniline inks;
2. Logwood inks;
3. Nutgall inks;
4. Tannin inks, and,
5. Miscellaneous inks.

The first class yields copying and writing inks, as well as the various colored inks which are in use for various purposes. The second class yields copying and writing inks, and the third and fourth classes yields document and copying inks. The fifth class embraces hectograph inks, indelible inks, sympathetic inks, etc.

In order that a good ink may retain its excellent qualities, certain cautions should be observed in its use: Before putting a new ink in an ink-well, the old ink should be entirely removed and the ink-well washed. Also no ink container should be used which cannot be closed, and such ink vessel should always be closed when not in use. If an ink is liable to thickening or other change, the ink-well should be cleansed before refilling, even if with the same ink.

Several preparations, which are used in the manufacture of many of the inks which follow, are mentioned here.

Nutgall infusion:

Chinese nutgallav.oz. 7
Talcum, purifiedav.oz. $\frac{3}{4}$
Water, distilledsufficient

Reduce the nutgall to coarse powder, moisten (not wet) the powder, and set the latter aside at a temperature of 20 to 25 degs. C. until it is thickly covered with mold. In order to hasten this molding, the drug should be moistened daily with water, so that it will always have about the same proportion of moisture. At the end of from 8 to 10 days, fermentation will have advanced sufficiently to admit of extraction of the drug. To the latter should be added 14 fluidounces of water, and the mixture heated for an hour on the water bath. Then express, treat the residue in the same manner with the same amount of water, and then again with 7 fluidounces of water. Mix the three liquids obtained, add the talcum, shake well, set aside for 24 hours, filter, and add enough water, if necessary, through the filter to make the filtrate measure 32 fluidounces.

The infusion will keep for several days.

Tannin solution:

Tannic acidav.oz. 8
Muriatic acid, commercialfl.dr. 4
Distilled watersufficient

Mix the two acids and 8 fluidounces of water in a flask, and heat on a water bath to a temperature of 80 to 90 degs. C. for 8 hours, adding from time to time hot water until 27 fluidounces are added.

This solution should not be kept longer than 7 days.

Aniline Inks.—Many of the coal tar dyes (misnamed "anilines,") which are now manufactured, produce excellent copying inks. Compared to nutgall, tannin, and logwood inks, they are less permanent, but they will serve excellently where no especial permanence is required. They are especially useful as hectograph inks. Where permanence of writing is demanded, as in the draughting of documents, aniline inks cannot be employed as they soon become bleached from the action of air and light.

It is to be noted here that water containing

lime decomposes many aniline colors, and solutions of these dyes in calcareous water may thicken in the course of time, hence only distilled water should be employed in the manufacture of these inks.

In using, only the best obtainable dye of the kind mentioned should be used, as otherwise good results cannot be obtained.

Logwood Inks.—These might also be designated as chrome inks, for they always contain potassium bichromate or chrome alum; also some acid, with the object of producing acid salts of the chromium compound. The greater the amount of acid in proportion to the chromium, the paler or redder and thinner the product, and, conversely, the greater the proportion of chromium, the darker and thicker the ink will be. Most logwood inks copy with great facility—writing produced sometimes being copyable even after weeks and months.

Logwood inks can be more easily erased from paper than nutgall inks. They have the advantage of furnishing several copies if desired. All inks lose their copying qualities when exposed to air containing even traces of ammonia. In order to facilitate copying with an exposed logwood ink, the copying paper should be moistened with a one-tenth per cent aqueous solution of potassium chromate. Old writing made with logwood ink may be copied in the same manner, even after the lapse of years.

Logwood inks may be prepared from the following solution:

Logwood extract solution:

Logwood extract, best.....av.oz. $4\frac{1}{2}$
Distilled water.....fl.oz. 20

Dissolve the extract in the water on a water bath, set the solution aside for 8 days, and decant the clear liquid.

Nutgall Copying Inks.—Copying inks differ from non-copying in that they retain their copying qualities. Inks which are made with ferric salts soon become non-copyable, while those made with ferrous salts, especially ferrous sulphate, copy the best. Hence copying inks are made with ferrous salts, and non-copying inks with ferric salts. The copying qualities of ink are improved by the addition of pure sugar or of glucose

In preparing the different nutgall copying inks, the following mixture, which may be known as "Nutgall Ink Body I," forms the basic ingredient:

Nutgall Ink Body I.:

Nutgall infusion.....fl.oz. 80
Sulphuric acid, concentrated.....m. 40
Ferrous sulphate, pure.....gr. 100
Distilled water.....sufficient

Mix the infusion and acid; heat for 15 minutes on a water bath, dissolve the iron salt in the mixture, transfer the latter to a bottle, cork well, set aside for 2 weeks, filter and add through the filter enough water to make the filtrate measure 32 fluidounces.

Nutgall Non-Copying Inks.—The following mixture, known in these pages as "Nutgall Ink Body II," serves as a body for many of the inks mentioned below:

Nutgall Ink Body II.:

Nutgall infusion.....fl.oz. 32
Solution of chloride of iron, U.
S. P.....fl.oz. $2\frac{1}{4}$
Distilled water.....fl.dr. 6

Allow this mixture to stand for 2 weeks in a closed vessel, and then filter.

Tannin Copying Inks.—Tannin copying inks, like the nutgall copying inks, are preferably made with ferrous salts and contain an addition of sugar or glucose. The following mixture, which may be known as tannin "ink body I," is the basic ingredient of the tannin copying inks:

Tannin Ink Body I.:

Tannin solution.....fl.oz. 15
Ferrous sulphate, pure.....av.oz. $1\frac{1}{4}$
Distilled water.....sufficient

Heat the tannin solution to about 70 or 80 degs. C., also dissolve the iron salt in 9 fluidounces of hot water; mix the hot solutions by pouring iron solution gradually into the tannin solution, set the mixture aside for 3 weeks, filter and add enough water through the filter to make the filtrate measure 25 fluidounces.

Tannin Non-Copying Inks.—The tannin inks herein mentioned are frequently prepared by the use of the following mixture, which may conveniently be termed "tannin ink body II."

Tannin Ink Body, II.:

Tannic acid.....	av.oz. 3½
Solution of iron chloride, U.	
S. P.....	fl.oz. 4
Muriatic acid, commercial.....	fl.dr. 2¼
Water.....	sufficient

Mix the two acids, the solution and 7 fluid-ounces of water in a flask on a water bath, at a temperature of 80 to 90 degs. C., for a period of 10 hours. Then add 20 fluidounces of hot water; continue the heat for another hour, transfer to a bottle, cork well, set aside in a cool place for 2 weeks, filter and add through the filter enough water to make the filtrate measure 32 fluidounces.—D.

Ink, Alizarin.

Alizarin paste.....	gr. 225
Sodium carbonate, pure.....	gr. 105
Extract of logwood.....	gr. 375
Carbolic acid.....	fl.dr. 1¼
Water.....	fl.oz. 32

Dissolve the sodium carbonate in a small amount of water, add the alizarin paste, then the extract of logwood, previously dissolved, in the remainder of the water. Filter and transfer the liquor to a rather large bottle, drop in a few nails or iron filings, and expose the whole to the sunlight for a week, with occasional agitation. Lastly, decant and preserve by incorporating the carbolic acid. This ink does not corrode the pen, is not affected by light, and does not gum, but it is not acid proof.

Ink, Alizarin, Copying

I.	
Indigotin.....	gr. 95
Aniline green, D.....	gr. 57
Sugar.....	av.oz. 1¼
Distilled water.....	fl.oz. 8
Nutgall ink body I.....	fl.oz. 32
Carbolic acid.....	drops 20

Dissolve the dyes and sugar in the water by the aid of heat, add the remaining ingredients, transfer the mixture to a bottle; tie over the latter a piece of paper, set aside in a cool place for a week, and decant the clear liquid from the trifling precipitate.—D.

II.

Indigotin.....	gr. 70
Aniline green, D.....	gr. 42
Glucose.....	av.oz. 1¼
Distilled water.....	fl.oz. 2
Tannin ink body I.....	fl.oz. 25
Carbolic acid.....	drops 15

Dissolve the dyes and glucose in the water

by the aid of heat, add the remaining ingredients, transfer to a bottle; tie over the latter a piece of paper, set aside in a cool place for one week, and decant the clear liquid from the trifling precipitate.—D.

Ink, Alizarin, Non-Copying.**I.**

Aniline green, D.....	gr. 76
Indigotin.....	gr. 128
Water.....	fl.oz. 28
Nutgall ink body II.....	fl.oz. 38
Carbolic acid.....	fl.dr. ½

Dissolve the two dyes in the water by the aid of heat, add the other ingredients, transfer the mixture to a bottle, tie over the mouth of the latter a piece of paper, set aside for one week in a cool place, and decant the clear liquid from the trifling sediment.—D.

II.

Indigotin.....	gr. 80
Aniline green, D.....	gr. 48
Tannin ink body II.....	fl.oz. 16
Distilled water.....	fl.oz. 25
Carbolic acid.....	drops 20
Sugar.....	gr. 40

Dissolve the dyes in the water by the aid of heat, add the other ingredients, transfer to a bottle, tie over the latter a piece of paper, set aside for one week in a cool place, and decant the clear liquid from the trifling precipitate.—D.

Ink, Black, Copying.**I.**

Phenol black (coal tar dye).....	gr. 190
Sugar.....	av.oz. 1¼
Distilled water.....	fl.oz. 8
Nutgall ink body II.....	fl.oz. 32
Carbolic acid.....	drops 20

Prepare like alizarin copying ink, No. I.—D.

II.

Phenol black, B. (coal tar dye).....	gr. 140
Glucose.....	av.oz. 1¼
Distilled water.....	fl.oz. 2
Tannin ink body I.....	fl.oz. 25
Carbolic acid.....	drops 15

Prepare like alizarin copying ink, No. II.—D.

III.

Aleppo galls.....	av.oz. 5½
Cloves.....	gr. 60
Distilled water.....	fl.oz. 40
Ferrous sulphate, pure.....	gr. 720
Sulphuric acid, pure.....	m. 35
Neutral sulphate of indigo.....	gr. 120

The galls and cloves, coarsely ground, may

be exhausted by percolation until 40 fluidounces are obtained, or they may be macerated with sufficient water. In either case it is intended to produce 40 fluidounces of the fluid, and allowance must be made for the water absorbed by the marc. To this, when filtered, add the iron, and when dissolved filter again, then add the acid and, after mixing thoroughly, the indigo paste, after which it may be again filtered.

This produces a blue-black fluid, not apt to mold. To insure a superior product, careful attention must be paid to manipulation, details, and to the quality of its ingredients. The galls must be free from insect perforations, and the iron, selected crystals free from efflorescence or ferric salt, and the indigo neutral, or nearly so. If the article sold as "indigo paste" is not at hand, it may be prepared by carefully adding to the ordinary sulphate of indigo a solution of potassic or sodic carbonate until effervescence ceases.

IV.

Galls, ground	av.oz. 8
Ferrous sulphate, pure	av.oz. 4
Gum arabic	av.oz. 2
Sugar	av.oz. 2
Distilled water	fl.oz. 48

Macerate the galls, with frequent agitation, in 40 fluidounces of the water for one week; filter, and to this infusion add the iron, previously dissolved in the remaining pint of water. Dissolve in this mixture the gum and sugar; filter, and the ink is ready for use. A better product is obtained if the iron is dissolved in water made slightly acid with sulphuric acid.

V.

Extract of logwood	av.oz. 5½
Sodium carbonate	gr. 525
Water	fl.oz. 40
Glycerin	fl.dr. 4
Potassium chromate	gr. 80
Mucilage of acacia	fl.dr. 6

Heat the extract of sodium carbonate with the water by the aid of heat, add the glycerin, mucilage and potassium bichromate, the latter first dissolved in some water, and then add enough water, if necessary, to make up 40 fluidounces.

This ink will give a good copy without a press, by simply laying a sheet of moist copy-

ing paper over the written page, covering with a sheet of letter paper and pressing evenly with the hand or paper knife.

Ink, Black, Non-Copying.

I.

Phenol black, B (coal tar dry)	gr. 320
Water	fl.oz. 28
Nutgall ink body II	fl.oz. 38
Carbolic acid	fl.dr. ½

Prepare like alizarin non-copying ink, No.

II.—D.

II.

Phenol black, B (coal tar dye)	gr. 160
Tannin ink body II	fl.oz. 16
Distilled water	fl.oz. 25
Carbolic acid	drops 20
Sugar	gr. 40

Prepare like alizarin non-copying ink, No.

II.—D.

Ink, Black, Writing.

I.

Logwood extract solution	av.oz. 20
Potassium bichromate	gr. 90
Chrome alum	av.oz. 5
Oxalic acid	av.oz. 1
Carbolic acid	fl.dr. 1
Distilled water	sufficient

Mix the extract solution with 50 fluidounces of water, heat on a water bath to 90 degs. C., add the potassium bichromate, chrome alum, and oxalic acid previously dissolved in 15 fl.ozs. of water; continue the temperature of 90 degs. C. for one-half hour, then add enough water to make the mixture weigh 100 av.ounces, and the carbolic acid; set aside for 2 or 3 days, and decant the clear liquid.

This ink is black in color, and the writing is of the same tint. It is very cheap, and hence is adapted to school purposes.—D.

II.

Phenol black, B (coal tar dye)	av.oz. 2¼
Sugar	av.oz. 2¼
Carbolic acid	fl.dr. 1
Sulphuric acid, pure	m. 25
Distilled water	fl.oz. 96

Mix the dye with 6 fluidounces of cold water, allow to stand for 2 hours, then add the remainder of the water, in the boiling condition, and the other ingredients, and stir about until dissolved.

This ink writes a handsome blue-black. For school purposes it may be cheapened by reducing the dye even to 1½ av.ounces.—D.

III.

Logwood chips.....av.oz. 8
Potassium chromate.....gr. 40
Water.....sufficient

Boil the logwood with water to make 64 fluidounces of decoction, and to it add the potassium salt previously dissolved in water. This makes a very cheap ink.

IV.

Extract of logwood.....av.oz. 6¼
Lime water.....fl.oz. 50
Carbolic acid.....fl.dr. 1½
Muriatic acid.....fl.dr. 11
Mucilage acacia.....fl.oz. 5
Potassium bichromate.....gr. 90
Water, enough to make.....fl.oz. 108

Dissolve the extract in the lime water on a water bath, stirring constantly, and then add the two acids, which change the color of the solution from red to brownish yellow.

Set the mixture aside until cool, then filter; add the potassium salt, first dissolved in some water, then the potassium bichromate, and finally, the remainder of the water.

Ink, Blue-Black, Copying.

Prepare like red copying ink, No. III, but decreasing the sulphuric acid to 13 drops, and increasing the potassium bichromate to 70 grains.

This ink is of a dark-blue color; the writing and copies are blue-black.—D.

Ink, Blue, Copying.

I.

Phenol blue, 8 F (coal tar dye)...gr. 48
Sugar.....av.oz. 1¼
Distilled water.....fl.oz. 3
Nutmeg ink body I.....fl.oz. 32
Carbolic acid.....drops 20

Prepare like alizarin copying ink, No. I.—D.

II.

Phenol blue, 8 F (coal tar dye)...gr. 42
Glucose.....av.oz. 1¼
Distilled water.....fl.oz. 2
Tannin ink body I.....fl.oz. 25
Carbolic acid.....drops 15

Prepare like alizarin copying ink, No. II.—D.

III.

Resorcin blue, M (coal tar dye)...gr. 100
Sugar.....gr. 100
Oxalic acid.....gr. 20
Distilled water.....fl.oz. 20

Dissolve the dye in the water by the aid of heat; add the other ingredients, and again dissolve.—D.

Ink, Blue, Non-Copying.

I.

Phenol blue, 8 F (coal tar dye)...gr. 96
Water.....fl.oz. 28
Nutmeg ink body II.....fl.oz. 38
Carbolic acid.....fl.dr. ½

Prepare like alizarin non-copying ink, No. I.—D.

II.

Phenol blue, 8 F (coal tar dye)...gr. 60
Tannin ink body II.....fl.oz. 16
Distilled water.....fl.oz. 25
Carbolic acid.....drops 20
Sugar.....gr. 40

Prepare like alizarin non-copying ink, No. II.—D.

Ink, Blue-Green, Copying.

I.

Phenol blue, 8 F (coal tar dye)...gr. 88
Aniline green, D.....gr. 95
Sugar.....av.oz. 1¼
Distilled water.....fl.oz. 3
Nutmeg ink body I.....fl.oz. 32
Carbolic acid.....drops 20

Prepare like alizarin copying ink, No. I.—D.

II.

Phenol blue, 8 F (coal tar dye)...gr. 28
Aniline green D.....gr. 70
Glucose.....av.oz. 1¼
Distilled water.....fl.oz. 2
Tannin ink body I.....fl.oz. 25
Carbolic acid.....drops 15

Prepare like alizarin copying ink, No. II.—D.

Ink, Blue, Writing.

I.

Resorcin blue, M (coal tar dye)...gr. 48
Sugar.....gr. 192
Oxalic acid.....gr. 10
Distilled water.....fl.oz. 19¼

Mix the dye with 1 fluidounce of cold water, set aside for 2 hours, then add the remainder of the water, in the hot condition, and the other ingredients, and stir about until dissolved.

This ink writes a handsome blue and flows readily, but has the disadvantage of somewhat corroding the pen, and hence the latter should be cleaned frequently.—D.

II. A cheap blue ink may also be prepared

from soluble prussian blue by solution in water. A little mucilage of acacia may be added.

III.

Logwood, best.....	av.oz.	5
Alum.....	gr.	120
Acacia.....	gr.	120
Sugar.....	gr.	60
Water.....	fl.oz.	40

Boil for an hour, let stand 2 or 3 days, and strain.

Ink, Blue-Green, Non-Copying.

I.

Phenol blue, 3 F (coal tar dye)....	gr.	48
Aniline green, D.....	gr.	60
Water.....	fl.oz.	28
Nutgall ink body II.....	fl.oz.	38
Carbolic acid.....	fl.dr.	$\frac{1}{2}$

Prepare like alizarin non-copying, ink, No.

I.—D.

II.

Phenol blue, 3 F (coal tar dye)....	gr.	30
Aniline green, D.....	gr.	50
Tannin ink body II.....	fl.oz.	16
Distilled water.....	fl.oz.	25
Carbolic acid.....	drops	20
Sugar.....	gr.	40

Prepare like alizarin copying ink, No. II.

—D.

Ink, Eosin. (Scarlet Ink.—Coral Ink.)

I.

Eosin A, yellowish.....	gr.	144
Sugar.....	gr.	288
Distilled water.....	fl.oz.	20

Mix the dye with 1 fluidounce of cold water, set aside for 2 hours, add the remainder of the water, in the hot condition, and the sugar, and stir until dissolved.—D.

II.

Eosin (water soluble).....	gr.	120
Alcohol.....	fl.oz.	2
Mucilage of acacia.....	fl.oz.	1
Water, enough to make.....	fl.oz.	16

Dissolve the eosin in about 12 fluidounces of water, a small portion of this being poured hot upon the eosin contained in a bottle; next add the alcohol, and shake; finally, add the mucilage and enough water to make 16 fluidounces.

III. See also No. IV., "Red Copying Ink."

Inks, Glossy.

Ink may be made glossy by the addition of mucilage of gum arabic or of a solution pre-

pared by heating a mixture of borax, 180 grains; shellac, 60 grains; sugar, 120 grains, and water, 16 fluidounces.

Ink, Gold.

I. This may be prepared by mixing equal parts of potassium iodide and lead acetate, placing them upon a filter, and then pouring on twenty times the quantity of boiling distilled water. As the filtrate cools the lead iodide separates in golden scales. After the filtrate has cooled the precipitate should be collected on a filter, washed with a little cold water, and rubbed up to an ink with mucilage of acacia. The ink must be shaken before using.

II. Reduce gold foil to powder by triturating in a mortar with honey or syrup, dilute with water, decant the liquid, wash the gold several times with water; dry and mix with mucilage of acacia.

Ink, Green, Copying.

I.

Aniline green, D.....	gr.	114
Sugar.....	av.oz.	$1\frac{1}{4}$
Distilled water.....	fl.oz.	3
Nutgall ink body I.....	fl.oz.	32
Carbolic acid.....	drops	20

Prepare like alizarin copying ink, No. 1.—

D.

II.

Aniline green D.....	gr.	70
Glucose.....	av.oz.	$1\frac{1}{4}$
Distilled water.....	fl.oz.	2
Tannin ink body I.....	fl.oz.	25
Carbolic acid.....	drops	15

Prepare like alizarin copying ink, No. II.

—D.

Ink, Green, Non-Copying.

I.

Aniline green, D.....	gr.	192
Water.....	fl.oz.	28
Nutgall ink body II.....	fl.oz.	38
Carbolic acid.....	fl.dr.	$\frac{1}{4}$

Prepare like alizarin non-copying ink, No.

I.—D.

II.

Aniline green, D.....	gr.	100
Tannin ink body II.....	fl.oz.	13
Distilled water.....	fl.oz.	25
Carbolic acid.....	drops	20
Sugar.....	gr.	40

Prepare like alizarin non-copying ink, No.

II.—D.

Ink, Green, Writing.**I.**

Methyl green, bluish (water soluble).....	gr. 96
Sugar.....	gr. 192
Distilled water.....	fl.oz. 19½

Mix the dye with 1 fluidounce of cold water, set aside for 2 hours, then add the remainder of the water, in the hot condition, and the sugar, and stir about until dissolved.

—D.

Ink, Orange.

Aniline orange.....	gr. 144
Sugar.....	gr. 288
Distilled water.....	fl.oz. 20

Mix the dye with 1 fluidounce of water, set aside for 2 hours; then add the sugar and the remainder of the water, in the hot condition, and stir until dissolved.—D.

Ink, Purple.

Aniline purple.....	gr. 80
Alcohol.....	fl.dr. 12
Mucilage of acacia.....	fl.dr. 10
Water.....	fl.oz. 17

This color is brilliant at first, but is liable to fade.

Ink, Red Aniline.

See "Eosin Ink."

A red, inclining to purple, is made by dissolving fuchsin (ordinary aniline red) in water in the proportion of about 25 grains to the pint. Solution may be more readily effected by first dissolving the color in a little alcohol (about 5 fluidrams), and then adding the water. A small proportion of gum arabic is sometimes added to give the ink more "body." Two fluidrams to the pint is sufficient.

Another good formula is the following:

Erythrosin.....	gr. 75
Water.....	fl.oz. 16

Thicken with gum arabic, and add a little boric acid or other preservative.

Ink, Red, Carmine.**I.**

Carmine.....	gr. 192
Ammonium carbonate.....	gr. 192
Water of ammonia.....	fl.oz. 4
Mucilage of acacia.....	fl.oz. 8
Distilled water.....	fl.oz. 18

Mix the carmine and ammonium carbonate, dissolve in the ammonia water, and add the remaining ingredients.—D,

II.

Carmine.....	av.oz. ¼
Ammonia water.....	fl.oz. 1
Dextrin.....	gr. 120
Water.....	fl.oz. 16

Triturate the carmine, add to the ammonia and water, dissolve by agitation; add the dextrin, and again dissolve.

III.

Carmine.....	gr. 128
Ammonia water.....	fl.oz. 8
Distilled water.....	fl.oz. 8
Gum arabic.....	av.oz. ¼

—H.

IV.

Carmine.....	gr. 96
Ammonia water.....	fl.oz. 4½
Mucilage of acacia.....	fl.oz. 2½
Water.....	fl.oz. 18

Dissolve the carmine in the ammonia and add the other ingredients.

V.

Carmine.....	gr. 240
Water of ammonia.....	fl.oz. 3
Glycerin.....	fl.oz. 8
Water, q s.....	fl.oz. 8

Rub the carmine into a fine powder in a wedgewood mortar; make a paste with and dissolve in the water of ammonia, and then add, with constant trituration, the glycerin. Transfer to a porcelain capsule, and heat upon a water bath until the liquid is entirely destitute of ammoniacal odor; cool and add the water. The entire removal of the ammonia gas requires the constant stirring of the liquid with a glass rod, and rather lengthy heating.

This should be diluted with water.

Many of the carmine inks of the market are really eosin inks. See "Eosin Ink."

Ink, Red, Cochineal.

Cochineal, powder.....	gr. 490
Potassium carbonate.....	av.oz. 2¼
Cream of tartar.....	av.oz. 6¼
Potassa alum.....	gr. 196
Mucilage of acacia.....	fl.oz. 2½
Alcohol.....	fl.dr. 10
Oil of cloves.....	drops 15
Distilled water.....	fl.oz. 22

Macerate the cochineal and potassium carbonate with 19 fluidounces of water in a flask for 2 days; then add the cream of tartar and alum, heat on a water bath until all the carbonic acid gas is expelled, add the alcohol and filter. Wash the filter with 1 fluidounce

of water, and to the filtrate add the mucilage and the oil.

Writing with cochineal ink is very permanent.—D.

Ink, Red, Copying.

I.

Ponceau, R. R. (coal tar dye)...	gr. 152
Sugar	av.oz. 1 ¼
Distilled water.....	fl.oz. 3
Nutgall ink body I.....	fl.oz. 32
Carbolic acid.....	drops 20

Prepare like alizarin copying ink, No. I.—

D.

II.

Ponceau R. R. (coal tar dye)...	gr. 112
Glucose	av.oz. 1 ¼
Distilled water.....	fl.oz. 2
Tannin ink body I.....	fl.oz. 25
Carbolic acid.....	drops 15

Prepare like alizarin copying ink, No. II.—

—D.

III.

Logwood extract solution,...	av.oz. 24
Sulphuric acid, concentrated...	drops 40
Aluminium sulphate.....	gr. 700
Oxalic acid.....	gr. 700
Potassium carbonate.....	gr. 700
Potassium bichromate.....	gr. 52
Carbolic acid.....	drops 20
Distilled water.....	sufficient

Heat the extract solution with the acid on a water bath for 15 minutes. In the meantime dissolve the aluminium salt in the water at a moderate heat; add the potassium carbonate, stir until there is no further evolution of carbonic acid gas, then add the oxalic acid, stir until all the precipitate is dissolved and there is no further evolution of gas, and now add the potassium bichromate, and dissolve. Incorporate the latter solution with the extract mixture by pouring the former slowly into the latter, continue the heat for 15 minutes more, add enough water to make the liquid weight 40 av. ounces, and finally, add the acid.

This ink is of a handsome red color; it writes red, and the writing speedily darkens. It is the best copying ink here mentioned.—D.

IV.

Eosin A, yellowish	gr. 240
Sugar.....	gr. 288
Distilled water.....	fl.oz. 20

Mix and dissolve without heat.—D.

Ink, Red, Non-Copying.

I.

Ponceau R. R. (coal tar dye)...	gr. 192
Water	fl.oz. 28
Nutgall ink body II.....	fl.oz. 38
Carbolic acid.....	fl.dr. ½

Prepare like alizarin non-copying ink, No.

I.—D.

II.

Ponceau R. R. (coal tar dye)...	gr. 100
Tannin ink body II.....	fl.oz. 16
Distilled water.....	fl.oz. 25
Carbolic acid.....	gr. 20
Sugar.....	gr. 40

Prepare like alizarin non-copying ink, No.

II.—D.

Ink, Red.

In addition to the red inks previously mentioned, the following may also be of service:

I.

Pernambuco wood	av.oz. 4 ½
Alum	gr. 480
Acacia	gr. 480
Tin muriate (crystals).....	gr. 60
Diluted acetic acid.....	fl.oz. 16
Distilled water	fl.oz. 16

Mix the wood, water and acid, boil together until 24 fluidounces remain, add the alum; evaporate to 16 fluidounces, strain, add the acacia, dissolve, and then add the tin crystals.

II.

Brazil wood.....	av.oz. 2
Water	fl.oz. 32
Tin chloride	av.oz. ½
Mucilage of acacia.....	fl.dr. 1 ½

Boil the wood and water, strain, add the tin chloride, evaporate to 16 fluidounces, and add the mucilage.

Ink, Scarlet.

The so-called scarlet inks are usually the same as the eosin inks.

Ink, Silver.

This may be prepared from silver leaf by a process similar to making gold ink from gold leaf.

Ink, Vanadium.

Vanadium tannate was first proposed for use as a writing ink by Berzelius, because the writing is not affected by acids, but the high price of vanadium salts was a great obstacle

to its introduction. Since these salts have been more largely prepared for use in the manufacture of aniline black and other dyes, vanadium ink has again been proposed. The following formula may be used:

Tannic acid.....	gr. 480
Ammonium vanadate.....	gr. 19
Water.....	fl.oz. 11

Dissolve the acid in 10 fluidounces of water and the vanadate in 1 fluidounce of water, and mix the solutions.

This ink flows with a deep-black color from the pen, without spreading or striking through the paper, although it contains no gum. It has a pleasant gloss, cannot be copied, dries quickly, and, even if the writing is laid in water for 24 hours, does not change its black color. It is very useful for writing addresses of letters, postal cards, etc., when used fresh. Dilute acids do not alter it, but solutions of chlorinated potassa (or soda) bleach it completely. After a few weeks the tint of the ink begins to change, writing executed with it becomes lighter and somewhat yellowish, and in about 3 months the change is completed, when it has a fox-yellow tint. The writing is still plainly legible, however, and cannot be removed either by water or by acids.

Ink, Violet, Copying.

I.

Phenol blue, 3 F (coal tar dye)....	gr. 38
Ponceau R. R. (coal tar dye)....	gr. 57
Sugar.....	av.oz. 1 ¼
Distilled water.....	fl.oz. 8
Nutgall ink body I.....	fl.oz. 32
Carbolic acid.....	drops 20

Prepare like alizarin copying ink, No. I.—

D.

II.

Phenol blue, 3 F (coal tar dye)....	gr. 28
Ponceau R. R. (coal tar dye)....	gr. 42
Glucose.....	av.oz. 1 ¼
Distilled water.....	fl.oz. 2
Tannin ink body I.....	fl.oz. 25
Carbolic acid.....	drops 15

Prepare like alizarin copying ink, No. II.—
D.

III. Prepare like red copying ink, No. III., but decrease the amount of sulphuric acid to 27 drops and increase the potassium bichromate to 60 grains.

This ink is of a dark violet color, and the writing and copies are of the same hue.—D.

IV.

Methyl violet, 3 B (coal tar dye).....	gr. 200
Sugar.....	gr. 100
Oxalic acid.....	gr. 20
Distilled water.....	fl.oz. 20

Dissolve the dye by the aid of heat in the water, add the other ingredients, and again dissolve.—D.

Ink, Violet, Non-Copying.

Phenol blue, 3 F (coal tar dye)....	gr. 48
Ponceau R. R. (coal tar dye)....	gr. 64
Water.....	fl.oz. 28
Nutgall ink body II.....	fl.oz. 88
Carbolic acid.....	fl.dr. ½

Prepare like alizarin non-copying ink, No.

I.—D.

II.

Phenol blue, 3 F (coal tar dye)....	gr. 30
Ponceau R. R. (coal tar dye)....	gr. 40
Tannin ink body II.....	fl.oz. 16
Distilled water.....	fl.oz. 25
Carbolic acid.....	drops 20
Sugar.....	gr. 40

Prepare like alizarin non-copying ink, No.

II.—D.

Ink, Violet, Writing.

Methyl violet, 3 B (coal tar dye)....	gr. 96
Sugar.....	gr. 96
Oxalic acid.....	gr. 20
Distilled water.....	fl.oz. 19 ½

Mix the dye with 1 fluidounce of cold water, set aside for 2 hours, then add the remainder of the water, in the hot condition, and the other ingredients, and stir about until dissolved.—D.

Ink, White.

White inks, for writing on colored surfaces, consist either of a white mineral suspended in a viscid medium, or of chemicals affecting the coloring material in the paper. This, in the case of ultramarine, is an oxalic acid solution, or hydrochloric acid, according to this formula:

Ink for Blue Paper.

Hydrochloric acid.....	fl.dr. 1
Mucilage.....	m. 30
Water.....	fl.dr. 7

To produce white writing on photographs, iodine is employed, as in the next formula:

Ink for Silver Prints.

Iodine	gr. 15
Acacia	gr. 15
Potassium iodide.....	gr. 150
Water	fl.oz. 1

For preparations of the first order take lightest zinc white, or lead white, or magnesium carbonate, or freshly precipitated barium sulphate, or starch (all in an impalpable powder) and suspend in a diluted solution of gum arabic, dextrin, or tragacanth. The mixture requires shaking from time to time to keep the pigments from separating. The "ink" may be preserved by addition of oil of cloves or other antiseptic to prevent decomposition of the mucilage.

Ink, Branding.

By this is meant an ink used for marking boxes, bales, packages, etc., by means of a small brush. They are frequently termed marking inks.

I.

Shellac	av.oz. 2
Borax.....	av.oz. 2
Gum arabic.....	av.oz. 2
Water	fl.oz. 25
Pigment	sufficient

Boil the borax and shellac in the water until they are dissolved, add the gum arabic and allow to cool. Add water to complete 25 fluidounces and then stir in the pigment, using either venetian red, lampblack, ultramarine, or prussian blue. Black is improved by the addition of blue. Green may be produced from a mixture of blue and chrome yellow.

II.

Extract of logwood	av.oz. 2
Potassium bichromate.....	gr. 60
Water, hot.....	gal. 1

Dissolve the extract of logwood in part of the water, and the potassium bichromate in another portion; mix the two solutions and allow to stand for 1 or 2 weeks.

III.

Prussian blue.....	av.oz. 2
Lampblack.....	av.oz. 1
Gum arabic.....	av.oz. 3
Glycerin	sufficient

Triturate together the dry powders and then make into a suitable paste with glycerin.

IV. Mix boiled linseed oil with sufficient lampblack or other suitable pigment.

Ink, Diamond.

These are liquids used for etching glass. Commercial strong hydrofluoric acid often gives negative results, because when applied in its pure state, it produces such a smooth corrosion of the glass that it may elude superficial inspection. The most common method consists in mixing ammonium fluoride with precipitated barium sulphate and decomposing with sulphuric acid, and is as follows:

Ammonium fluoride.....	av.oz. 1
Barium sulphate.....	av.oz. 3
Sulphuric acid.....	sufficient

Rub the two solids together, transfer to a platinum, lead or gutta-percha vessel, and add sufficient sulphuric acid to produce a cream-like paste. Operators must be cautioned against inhaling the exceedingly acrid vapors of hydrofluoric acid. Apply with a quill or camel's-hair pencil.

A second formula is as follows:

Ammonium fluoride.....	av.oz. 2
Barium sulphate.....	av.oz. 2
Hydrofluoric acid, fuming.....	sufficient

Mix the 2 salts in a porcelain mortar, transfer to a platinum or lead vessel, and by means of a platinum wire stir in enough of the acid to make a thin paste.

Writing may be performed with a steel pen, allow it to remain for one-half hour, and then wash off with water. To make etching more visible, rub in a little printer's ink.—D.

Ink, Enamel.

An ink, or rather varnish, for writing labels which are intended to resist the action of acids, etc., may be prepared as follows:

Shellac.....	av.oz. 1
Borax.....	av.oz. 1½
Nigrosin, water-soluble.....	av.oz. ¼
Tannic acid	gr. 15
Picric acid	gr. 5
Ammonia water.....	fl.dr. 12
Water.....	sufficient

Dissolve the shellac and borax in 15 to 20 fluidounces of water by the aid of heat, and filter hot; to the filtrate add the nigrosin, acids and ammonia, and then enough water to reduce the mixture to the required dilution.

The ink should be of such consistence that it will readily flow from the pen.

Ink Erasures.

Fresh ink spots are removed with comparative ease; old spots, especially after passing repeatedly through the laundry, are usually extinguished with considerable difficulty. The ink erasives are intended for the removal of ink spots from paper as well as from fabrics.

I.

The following composition will remove ink or writing fluids from paper, cloth, etc.:

No. 1.

Citric acid.....	av.oz. 2
Water	fl.oz. 16
Saturated aqueous solution of borax	fl.oz. 8 or 4

Dissolve the acid in the water and add the borax solution.

No. 2.

Chlorinated lime.....	av.oz. 6
Water	fl.oz. 16
Saturated aqueous solution of borax	fl.oz. 8 or 4

Mix the lime and water, shake well, set aside for 1 week in a well stoppered bottle, decant the clear liquid, and add the borax solution.

This composition is used by saturating the ink spot with solution No. 1, removing excess of liquid with a blotter, and then applying solution No. 2. When the stain has disappeared, apply the blotter, and wash the spot by the alternate use of clear water and blotting paper. The above composition, we believe, is patented.

Ink destroyed in such a manner cannot well be brought in view again by chemicals. Tannic or gallic acids will sometimes restore obliterated writing.

II.

Take of chlorinated lime 4 av. ounces, thoroughly pulverized, and 32 fluidounces distilled water. Shake well and set the mixture aside for 24 hours, in order to dissolve the lime, then strain through a cotton cloth, after which add 2 fluidounces of acetic acid to every pint of chloride of lime water.

The eraser is used by reversing the penholder in the hand, dipping the end of the reversed penholder into the fluid and applying, if without rubbing, to the word, figure or blot required to be erased. When the ink

has disappeared absorb the fluid with a blotter, and the paper is immediately ready to write upon again.

III. Treat the stain with stannous chloride to reduce the ferric salt to the ferrous condition and then treat with oxalic acid solution.

Inks, Hectograph.

These are inks which are used in connection with hectographs (See "Hectograph Masses"). As will be observed, they are made with coal tar, so-called aniline dyes.

Ink, Hectograph, Black.

Dissolve nigrosin in water in the proportion of 1 of the former to 5 or 7 of the latter.

Ink, Hectograph, Blue.

I.

Resorcin blue, M.....	gr. 50
Glycerin	fl.dr. ½
Alcohol.....	fl.dr. 1
Acetic acid, glacial.....	drops 5
Distilled water.....	fl.dr. 7

Dissolve the dye in a mixture of the other ingredients by the aid of heat.—D.

II

Brilliant green, crystals.....	gr. 200
Hoffmann's violet, 4 B.....	gr. 200
Glycerin	fl.dr. 1
Water	fl.dr. 12

Mix the two coloring matters in a mortar, and reduce them, if in lumps, to a moderately fine powder. Transfer this to a tared flask, add the glycerin and water, and heat the flask on a water bath, frequently agitating, until the colors are dissolved. Then allow the flask to cool, replace it on the scale and restore the loss of water.

Ink, Hectograph, Green.

Aniline green D.....	gr. 100
Acetic acid, glacial.....	drops 5
Glycerin.....	fl.dr. ½
Alcohol.....	fl.dr. 1
Distilled water	fl.dr. 7

Dissolve the dye in a mixture of the other ingredients by the aid of heat.—D.

Ink, Hectograph, Red.

I.

Eosin, ff 40.....	gr. 180
Distilled water.....	fl.dr. 6½
Glycerin	fl.dr. ½

—D.

II.

Aniline red.....	gr. 120
Alcohol.....	fl.dr. 4
Acetic acid, diluted.....	fl.dr. 1
Water.....	fl.dr. 4

III.

Rosaniline.....	gr. 100
Water.....	fl.oz. 1
Alcohol.....	fl.dr. 1

IV. A satisfactory ink can also be prepared by dissolving rosaniline in a cold saturated solution of oxalic acid.

Ink, Hectograph, Violet.

I.

Methyl violet, § B.....	gr. 48
Alcohol.....	fl.dr. 1
Distilled water.....	fl.dr. 7½

Dissolve the methyl violet in the alcohol and water by the aid of gentle heat.—D.

II.

Aniline violet.....	gr. 120
Alcohol.....	fl.dr. 1
Acetic acid, diluted.....	fl.dr. 1
Water.....	fl.dr. 7

III.

Violet aniline.....	gr. 40
Alcohol.....	fl.dr. 2
Glycerin.....	fl.dr. 1
Water.....	fl.dr. 2

Dissolve by trituration.

IV.

Hoffmann's violet, BBB.....	gr. 120
Alcohol.....	fl.oz. 2 or 3
Glycerin.....	fl.dr. 4
Water.....	fl.dr. 4

Dissolve the dye in the alcohol, add the other ingredients and evaporate on a water bath to 1½ av. ounces.

V.

Aniline violet.....	gr. 60
Distilled water, hot.....	fl.dr. 7
Alcohol.....	fl.dr. 1
Glycerin.....	fl.dr. ½
Carbolic acid.....	drops 5

Inks, Indelible.

All the inks under the heading of "Inks, Marking," are indelible and are intended for marking clothes. There are also a number of the formulas under the titles of "Inks, Stamping" and "Inks for Rubber Stamps," which are indelible and which differ from the marking inks only in the fact that the former are applied with a pen and the latter with a stamp.

Inks, Invisible or Sympathetic.

Invisible or sympathetic inks are fluids used for writing purposes, the characters made with them being invisible, but becoming visible upon the application of heat or of some suitable reagent. Writing made with those inks which becomes visible upon the application of heat, again becomes invisible upon cooling; on the contrary, writing developed by chemical action remains permanent.

I. Cobalt chloride.....	gr. 150
Glycerin.....	fl.dr. ½
Water.....	fl.oz. 3

Mix and dissolve the ingredients.

The characters traced with this ink become blue on gently heating the paper.—D.

II.

Linseed oil ..	m. 25
Water of ammonia.....	fl.oz. 1
Water	fl.oz. 5

To make the writing or the drawing appear which has been made upon paper with the ink, it is sufficient to dip it into water. On drying, the traces disappear again, and reappear by each succeeding immersion.

The mixture must be agitated each time before the pen is dipped into it, as a little of the oil may separate and float on top, which would of course, leave an oily stain upon the paper.

III. Write with tincture of iron chloride, diluted with 10 parts of water, and develop with a blotter moistened with a solution of tannin or decoction of nutgalls or strong tea.

This may be reversed by writing with a decoction of nutgalls and developing with the blotter moistened with tincture of iron.

The characters when developed are black.

Instead of using nutgalls to develop the iron, potassium or ammonium, sulphocyanide solution may be employed. The writing will then appear red.

IV. Write with a solution of ferrocyanide of potassium in 20 parts of hot water. Develop with a blotter moistened with a solution of iron chloride.

This operation may, like the preceding, be reversed.

The characters when developed are blue.

V. Copper sulphate and ammonia, equal parts, dissolved in water. The writing turns yellow when exposed to heat.

The ammonium chloride may be replaced by potassium bromide.

Lemon juice, or the mineral acids diluted, solution of salt, saltpetre and many other substances, when the writing is exposed to heat, turn yellow or brown.

VI. A weak solution of nickel chloride, mixed with chloride of cobalt, turns a beautiful green when exposed to heat.

VII. Copper, dissolved in muriatic acid and diluted (or a solution of copper chloride), becomes yellow when the writing is heated, and disappears when cold.

VIII. A solution of cobalt acetate, to which a little nitrate of cobalt is added, becomes rose color when the writing is heated, and disappears when cold.

Inks, Marking.

These are the inks intended for marking clothes prior to passing them through the laundry.

In order to distinguish from branding inks, read article under "Inks, Branding." See also "Inks, Indelible."

Ink, Black, Marking.

I.	Silver nitrate.....av.oz.	5
	Gum arabic.....av.oz.	8
	Stronger water of ammonia...fl.oz.	12
	Lampblack.....gr.	180

Dissolve the silver nitrate and gum arabic in the ammonia water, by frequent agitation in a dark amber bottle, then incorporate the lampblack with this solution by trituration.

In using, write with a quill pen, allow the writing to dry, then pass a hot iron over it.

If the quantity of gum be increased to 5 fluidounces, the ink may be spread on a plate of glass and a rubber stamp may then be used to apply it. When the mark is dry, it should be ironed as in the preceding case.—D.

II. The indelibility of this ink depends on the fact that when potassium bichromate and gelatin come together, particularly in the form of a thin film, in the presence of daylight, the film becomes insoluble in hot or cold water.

	Gelatin.....gr.	2
	Potassium bichromate.....gr.	2
	Nigrosin.....gr.	10
	Water.....fl.oz.	1

Dissolve the gelatin and the nigrosin in most of the water, and the potassium bichromate in the remainder. Mix the two solutions in an amber-colored bottle.

If it is found that the ink "gums" in the pen, the quantity of gelatin and bichromate may be somewhat reduced.

The ink, when properly made, cannot be entirely removed by hot or cold water, acids or alkalis.

III.

Asphalt, in pieces.....av.oz.	2
Benzol.....fl.oz.	8
Coal tar.....av.oz.	8

Dissolve the asphalt in the benzol and add the coal tar.

In using the ink, employ an ordinary pen, and if it should be too thick, thin it with a little oil of turpentine. This ink does not spread, and requires no heating. It never fades, and it is not affected by anything.

IV.

Silver nitrate.....gr.	240
Infusion of nutgalls.....fl.dr.	1
Acacia.....gr.	60
Distilled water.....fl.oz.	4

Dissolve the silver nitrate in 4 fluidounces of water. In the remainder of the water dissolve the acacia and add the infusion. Then mix the two liquids. The infusion of nutgalls should be made by pouring 4 fluidrams of boiling distilled water upon 15 grains of powdered nutgalls.

This is Woodhouse's indelible ink.

V.

Shellac.....gr.	480
Borax.....gr.	240
Gum arabic.....gr.	240
Lampblack.....sufficient to color	
Water.....fl.oz.	10

Dissolve the borax in 9 fluidounces of water, and boil with the shellac until nearly all is dissolved; filter, and add the gum, previously dissolved in 2 ounces of water. Then color with sufficient lampblack.

VI. The following is Boettger's formula for an indelible marking ink:

Aniline black.....gr.	60
Acacia.....gr.	90
Hydrochloric acid, concentrated.fl.dr.	1
Alcohol.....fl.oz.	1
Water.....fl.oz.	8½

Triturate the aniline with the alcohol and

acid mixed, then add a warm solution of the gum in the water.

This ink does not act upon steel pens, and is indestructible by strong acids or alkalies.

If the deep-blue liquid first produced is diluted (instead of with solution of acacia) with a solution of 75 to 90 grains of shellac in alcohol, a varnish is obtained which may be used to apply a jet-black coat to wood, metal, or rubber.

VII.

Silver nitrate.....	av.oz.	1
Ammonia water, 10 per cent.....	sufficient	
Acacia.....	av.oz.	1
Sodium hydrate.....	gr.	285
Soluble black aniline.....	gr.	190
Distilled water.....	fl.oz.	6

Dissolve the silver nitrate in 8 fluidounces of distilled water and add 2 fluidounces of ammonia water, or sufficient to dissolve the brown precipitate formed at first. To this liquid add the acacia and sodium hydrate, first dissolved in the remainder of the water; heat gently for 10 minutes, and finally, dissolve in the mixture the aniline.

VIII.

Aniline oil.....	av.oz.	17
Potassium chlorate.....	av.oz.	1
Hydrochloric acid, pure.....	fl.oz.	12
Copper chloride, pure.....	gr.	500
Distilled water.....	fl.oz.	9

Mix the aniline oil, potassium chlorate, and 5 fluidounces of distilled water in a capacious flask and heat on a water bath to a temperature of 80 to 90 degs. C., until the chlorate is completely dissolved. Now add one-half the acid, heat again until the liquid begins to darken; to the liquid add the copper chloride dissolved in the remainder of the water, and, finally, add the remainder of the acid, and heat again on a water bath until the mixture has acquired a fine red-violet color. Set the mixture aside for several days in a well-stoppered vessel and decant the clear liquid from the trifling precipitate.

This ink must be applied by means of a quill—a steel pen is quickly corroded by it. It is suited only for marking fabrics made of vegetable fibers (linen, cotton, etc.), and cannot be used on wool or silk. Writing made with it appears at first pale reddish, turning green on exposure to light, and, when washed

with water containing soap or alkali, changes to deep black.

This ink may also be used with a rubber stamp as a stamping ink.—D.

Ink, Marking, Blue.

I.

Silver nitrate.....	gr.	240
Stronger ammonia water.....	fl.dr.	12
Sodium bicarbonate.....	gr.	240
Copper sulphate.....	gr.	120
Mucilage of acacia.....	fl.oz.	2
Distilled water, enough to make.....	fl.oz.	8

Dissolve the silver salt in the ammonia, and the soda and copper salt in a portion of the water; mix the two solutions and add the mucilage and the remainder of the water. If the ammonia water mentioned above is insufficient for solution, more should be added.

Ink, Marking, Red (Crimson or Carmine.)

I.

Silver nitrate.....	gr.	120
Sodium carbonate, pure.....	gr.	180
Tartaric acid.....	gr.	40
Stronger water of ammonia.....	fl.dr.	4
Carmine.....	gr.	1½
Sugar.....	gr.	90
Gum arabic.....	gr.	150
Distilled water.....	sufficient	

Dissolve the silver nitrate and sodium carbonate separately in 16 fluidounces of distilled water, and mix the solutions. Wash the precipitate by decantation with 32 fluidounces of water three times; collect on a filter, and wash with a fourth pint of water; drain well; transfer the precipitate to a mortar and rub up with the tartaric acid; when effervescence ceases, add the ammonia (in which the carmine has been dissolved), then the sugar and gum (previously made into a cream with water). Finally, make up to 16 fluidounces with distilled water.

II.

Silver nitrate.....	gr.	120
Tartaric acid.....	gr.	120
Ammonia water.....	fl.oz.	1
Gum arabic.....	gr.	180
Sugar.....	gr.	120
Carmine.....	gr.	5
Distilled water, enough to make.....	fl.oz.	4

Dissolve the silver nitrate and the acid separately in 8 fluidounces of water, mix the solutions, and add the ammonia. Dissolve

the gum and sugar in water, triturate this with the carmine, add the first solution, mix well, and add the remainder of the water.

Ink Stains, Indelible, to Remove.

Inasmuch as these inks usually contain silver, the staining is caused by the latter. One method of removing the stain consists in soaking in solution of common salt, which forms silver chloride, and then washing with ammonia.

Another method recommended is to treat the stains with iodine, and then with potassium iodide solution.

Ink, Stamping. (Rubber-Stamp Inks.)

Some of these inks are used as marking inks for clothes; in general they are intended for stamping paper. See also "Inks, Metal Stamp."

I.

Aniline blue, water soluble, I B.	av.oz.	$\frac{3}{4}$
Yellow dextrin	av.oz.	$2\frac{1}{2}$
Distilled water	fl.oz.	$2\frac{1}{2}$
Glycerin	fl.oz.	14

Mix the dye and dextrin, dissolve by the aid of a water bath in the water, add the glycerin, and replace the water lost by evaporation.

Other colors are produced by substituting for the blue any one of the following:

Methyl violet B, violet color	av.oz.	$\frac{3}{4}$
Diamond fuchsin I, red color	av.oz.	$\frac{1}{2}$
Methyl green, yellowish-green color	av.oz.	1
Vesuvium B, brown color	av.oz.	$1\frac{1}{4}$
Phenol black B	av.oz.	$\frac{3}{4}$
Eosin, BBN red color	av.oz.	$\frac{3}{4}$

—D.

II.

Sodium carbonate	av.oz.	1
Glycerin	fl.oz.	3
Acacia	av.oz.	1
Silver nitrate	av.oz.	$\frac{1}{2}$
Ammonia water	fl.oz.	1
Venice turpentine	av.oz.	$\frac{1}{2}$

Triturate the sodium carbonate, gum arabic and glycerin together. In a separate flask dissolve the silver nitrate in the ammonia water, mix the solution with the triturate and heat to boiling, when the turpentine is to be added with constant stirring. After stamping, expose to the sunlight, or use a hot iron. The quantity of glycerin and gum arabic may be varied to suit circumstances.

III.

Borax	av.oz.	1
Shellac, bleached	av.oz.	1
Mucilage of acacia	fl.oz.	1
Ultramarine blue	av.oz.	$\frac{1}{2}$ to 1
Water,		
Glycerin	of each,	sufficient

Dissolve the borax in 10 fluidounces of water, heat to boiling, add the shellac, and dissolve. Now triturate the mucilage with the ultramarine, add this to the shellac solution, and then enough of equal parts of water and glycerin to make 12 fluidounces.

IV. Take of the finest quality of lampblack and rub into a smooth paste with a sufficient quantity of glycerin; or take a good black printer's ink and thin the same with kerosene.

Ink, Stamping (for use with metal stamps).

Rubber-stamp inks usually have glycerin as a vehicle; metal-stamp inks may have oil or glycerin as a vehicle, and hence the preceding rubber stamp inks may be used as metal-stamp inks, or the formulas given below. The formulas mentioned are of two varieties, one containing the coloring matter in suspension, the other in solution.

I. Mixture of pigments with oil:

A.

Ultramarine blue	av.oz.	1
Olive oil	fl.oz.	3
Mix intimately.		

B.

Prussian blue	av.oz.	$\frac{1}{4}$
Ultramarine blue	av.oz.	$\frac{1}{4}$
Olive oil	fl.oz.	4

Prepare like the preceding. The prussian blue alone does not mix readily with oil, and hence the ultramarine is added.

C.

Verdigris	av.oz.	$2\frac{1}{2}$
Oleic acid	fl.oz.	$\frac{1}{2}$
Olive oil	fl.oz.	7

Prepare like the preceding.

D.

Cinnabar or vermillion	av.oz.	4
Olive oil	fl.oz.	6

Prepare like the preceding.

E.

Gas carbon or lampblack	av.oz.	$1\frac{1}{2}$
Olive oil	fl.oz.	$8\frac{1}{2}$

—D.

II. Solution of dye in oil:

A.

Bordeaux red aniline, oil soluble.....gr.	72
Scarlet red aniline, oil soluble.....gr.	72
Oleic acid, crude.....fl.dr.	5
Castor oil.....fl.oz.	10

Mix the dyes intimately with the acid, gradually incorporate the oil, and heat the whole to 40 degs. C., agitating constantly meanwhile.

This makes a nice red color.

B.

Aniline blue, oil soluble.....gr.	144
Oleic acid, crude.....fl.dr.	5
Castor oil.....fl.oz.	10

Prepare like the preceding.

C.

Aniline violet, oil soluble.....gr.	144
Oleic acid, crude.....fl.dr.	5
Castor oil.....fl.oz.	10

Prepare like the preceding.

D.

Aniline black, oil soluble.....gr.	240
Oleic acid, crude.....fl.dr.	6
Castor oil.....fl.oz.	10

This mixture stamps blue-black.

E.

Aniline blue, oil soluble.....gr.	120
Aniline lemon yellow, oil soluble.....gr.	72
Oleic acid, crude.....fl.dr.	5
Castor oil.....fl.oz.	10

Prepare like the preceding.

This mixture stamps green.—D.

Ink, Stencil.

As a stencil ink, use No. I.; Branding Ink, and increase the amount of pigment.

Ink, Typewriter.

Typewriter ink is of two kinds, one being made with petrolatum and lampblack or similar pigment, the other with glycerin and alcohol and aniline color.

In making the first kind, put some best-quality petrolatum into a suitable vessel, and melt it by placing the vessel on a fire; then put in as much lampblack or bone black as the petrolatum will take up without becoming granular. To effect this incorporation the black pigment should be put in a little at a time, and the whole thoroughly stirred while making the additions. Be careful not to let the petrolatum be in excess, as it will cause

the print to have a greasy outline; while on the other hand, if the pigment be in excess, the print will not be clear. Ordinary bone black does not make a good product; purified animal charcoal will do better.

When a proper mixture of petrolatum and pigment has been made, remove the vessel from the fire, and while it is cooling mix equal parts of petroleum, benzine and oil of turpentine, and in this mixture put the black petrolatum compound, mixing in a little of the other, with constant stirring, so as to effect a thorough combination, and the petrolatum compound becomes dissolved. The quantity of the volatile solvent should be sufficient to render the fluid ink of the consistence of oil paint; the result will be a good, permanent black ink, which will not be rubbed off with water like aniline inks. For colored inks of this class use prussian blue, red lead, chrome yellow; and for inks of the aniline class use these dyes dissolved in equal parts of alcohol and glycerin; thus, for a black aniline ink dissolve one-half av-ounce of aniline black in 18 fluidounces alcohol, and then add the glycerin. Ink the ribbon in the usual way.

Having prepared the ink, proceed to ink the ribbon; the secret of success lies in the proper application of the ink to the ribbon. Thus: wind the ribbon on a piece of cardboard, spread on a table several layers of newspapers, then unwind the ribbon in such lengths as may be most convenient, and lay it flat on the paper; apply the ink, after well shaking it, by means of a soft brush, and rub it well into the interstices of the ribbon with a toothbrush. Hardly any ink should remain visible on the surface.

For inking typewriter ribbons the following process is also recommended: Into 2 fluidounces of any aniline writing ink put a teaspoonful of mucilage of acacia, and a teaspoonful of brown sugar, warm the mixture, and immerse the ribbon from the typewriter long enough for it to become well saturated. When dry, spread the ribbon on a board and brush it well with glycerin. Should there be too much color in the ribbon, press it out between absorbent papers with a warm flat-iron; or if too dry, brush it again with glycerin.

The secret of the ribbon giving out its

color is the glycerin, and if there is body enough in the color there is no danger that it cannot be made to work well. A ribbon so prepared is not affected by the dryness or humidity of the atmosphere.

It is necessary that the ribbon should retain a certain degree of moisture, for the gum and sugar make it dry and harsh, so the glycerin coating is put on; but there is danger of smearing the paper with too much moisture, or a wrinkled surface, and the ironing obviates this.

Users of the typewriter should so set a fresh ribbon as to start at the edge nearest the operator, allowing it to run back and forth with the same adjustment until exhausted along that strip; then shift the ribbon forward with the width of one letter, running until exhausted, and so on. Finally, when the whole ribbon is exhausted the color will have been equally used up, and on re-inking the work will appear even in color, while it will look patchy if some of the old ink has been left here and there, and fresh ink applied over it.

The following formula may also be used to make a typewriter ink:

Transparent soap.....	av.oz. 1
Glycerin	fl.oz. 4
Water	fl.oz. 12
Alcohol	fl.oz. 24
Aniline color.....	sufficient

Dissolve the soap in the water and glycerin by the aid of heat; dissolve the aniline color in the alcohol and mix the solution. If the ink is too soft, add more soap.

For the aniline color, use any suitable coal tar dye.

Insect Destroyers.

Insect destroyers are mentioned under the headings "Bedbug Exterminators," "Croton Bug Exterminators," "Flea Exterminators," "Fly Exterminators," "Insecticides for Agriculturists," "Insects in Drugs," "Lice Exterminators," "Mosquito Essence," "Mosquito Pastilles," "Mosquito Powder," "Moth Essence," "Moth Paper," "Moth Powder," "Moth Species," "Roach Pastes," and "Roach Powders." Other insecticides are mentioned here:

I.	Resin	av.oz. 1
	Oil of amber, crude.....	fl.oz. 1
	Benzin.....	gal. 1

II.	Sodium borosalicylate.....	gr. 150
	Decoction of quassia.....	fl.oz. 16

This bitter solution, in Germany known as "liquor insecta fugans," is claimed to be one of the very best applications to ward off biting insects of any kind.

III. The following preparation is known as "tincture of insect flowers."

Insect powder.....	av.oz. 2 3/4
Alcohol	sufficient

Make 10 fluidounces of tincture.

It may be applied as a preventive of insect stings; it may also be used, when mixed with an equal volume of alcohol, as a spray for the destruction of flies.—D. modified.

An ethereal tincture may be prepared in a similar manner, using spirit of ether as a menstruum. It is to be used like the preceding.—D.

A perfumed or compound tincture may be prepared as follows:

Eucalyptol.....	av.oz. 80
Oil of anise.....	m. 80
Camphor.....	gr. 400
Coumarin	gr. 1
Tincture of insect flowers.....	fl.oz. 16

Mix, set aside for several days, and filter.

IV. It has been proposed to abandon arsenic and its compounds as an insect destroyer, and to replace them with naphthalin, benzin, petroleum, carbon disulphide and chloroform. The latter liquid (which is not itself inflammable at ordinary temperatures) is capable of materially reducing, or altogether neutralizing the inflammability of the three liquids previously mentioned.

It is necessary to get the naphthalin into solution. For this purpose Hager recommends to mix 2 pounds of soft soap with 1 quart of boiling water, and to gradually add, under energetic agitation, 800 grains of oleic acid. If a sample of this is diluted and shaken with an equal volume of alcohol, and if it then still possesses an alkaline reaction, a little more oleic acid should be added, 150 grains being probably amply sufficient. The resulting product might be called "Mitigated Green Soap."

The parasiticide liquids may be prepared as follows:

1. Liquor Naphthalini Benzinatus:

Naphthalin	av.oz. 8
Chloroform	fl.oz. 4
Benzin	fl.oz. 11½

Mix at a temperature between 18 and 20 degs. C., and shake until solution has been effected.

2. Liquor Naphthalini Sulphocarbonatus:

Naphthalin	av.oz. 6
Chloroform	fl.oz. 10½
Carbon disulphide	fl.oz. 7

Prepare like No. 1.

For use in a more fluid form, either of these liquids is to be properly diluted; the following being a good formula:

Common family soap, dry	av.oz. ½
Castile soap, dry	av.oz. ½
Water	fl.oz. 18
Alcohol	fl.oz. 11
Liquor naphthalini benzinatus	fl.oz. 8

Dissolve the soaps in the water and alcohol, previously mixed, allow the liquid to become cold, and then add the naphthalin solution. Before using the liquid, shake it thoroughly.

If an ointment is required, 8½ av.ounces of petrolatum and 1½ av.ounces of ceresin are melted together, and before the mass sets 18 fluidounces of the liquor naphthalini benzinatus mixed with it.

If either of these is to be used as a parasiticide upon animals, it should be applied with a stiff brush, in quantity only large enough to moisten the skin or to render the hair or fur slightly glossy. Under all circumstances is it preferable to avoid using these compounds at night time, as accidents may occur by approach to or contact with flames.

Insects in Drugs.

Insects attack many drugs, and an excellent manner to destroy these insects, as well as to prevent their ravages is to pour some chloroform into the container, which should be well closed. Upon exposure of the drug to the atmosphere, the chloroform will be volatilized.

Insecticides for Agriculturalists.

Under this heading are mentioned various mixtures which are useful to the farmer for

the destruction of various insects that infest and destroy plants.

Riley Hubbard Kerosene Emulsion:

This insecticide acts by contact, and is applicable to all non-masticating insects (sucking insects, such as the true bugs, and especially plant lice and scale insects), and also to many of the mandibulate insects when the use of arsenites is not advisable. Kerosene emulsion may be made by means of various emulsifying agents, but the most satisfactory substances, and those most available to the average farmer and fruit-grower, are milk and soapsuds. In each of these cases the amount of emulsifying agent should be one-half the quantity of kerosene.

One of the most satisfactory formulas is as follows:

Kerosene	gals. 2
Common soap or whale-oil soap	av.oz. 8
Water	gal. 1

Dissolve the soap in the water by the aid of heat, and add the solution boiling hot to the kerosene. Churn the mixture by means of a force pump and spray nozzle for 5 to 10 minutes. The emulsion, if perfect, forms a cream which thickens upon cooling, and should adhere without oiliness to the surface of glass. No free oil should rise from surface of the liquid, as this would injure the foliage.

For use against scale insects, dilute one part of the emulsion with 9 parts of water. For most other insects, dilute one part of the emulsion with 15 parts of water. For soft insects, like plant lice, the dilution may be carried to from 20 to 25 parts of water. For most insects the proper dilution is with 15 parts of water. This liquid should be applied by force, and enough used to thoroughly wet the insects.

The milk emulsion may be produced by the same methods as the above.

Cook's Kerosene Emulsion:

Soft soap	quart 2
Kerosene	quart 1
Water	gal. 1

Boil the soap with the water until all is dissolved; remove from the fire, add the kerosene, and churn vigorously for 10 minutes to emulsify the kerosene.

This should be diluted with an equal bulk of cold water before using. It should be applied like the preceding.

One-half pound of hard soap may be substituted for the soft soap.

Glaser's Tobacco Insecticide:

Soft or green soap	av.oz. 2
Tobacco	av.oz. 1½
Fusel oil	fl.oz. 2½
Alcohol	fl.oz. 8
Water	sufficient

Dissolve the soap in 8 fluidounces of water; make about 8 fluidounces of infusion from the tobacco, mix the two liquids, add the remaining ingredients, and then enough water to make 1 quart.

This is to be sprinkled on the leaves of the infected trees.

Nessler's Tobacco Insecticide:

Green soap	av.oz. 4
Extract of tobacco	av.oz. 6
Animal oil	fl.oz. 5
Alcohol	fl.oz. 20
Water	fl.oz. 65

Dilute with 5 volumes of water before use.

Tobacco Decoction:

Tobacco leaves or stems	av.oz. 16
Water	gal. 3

Boil the tobacco with the water for one-half hour. Replace the water lost by evaporation and use without further dilution.

This is very effective against plant lice and soft caterpillars. Unlike the kerosene emulsion, it never burns the foliage. It is also an excellent fertilizer. It is especially recommended for indoor plants and small gardens.

The Resin Washes:

These insecticides act by contact, and also in the case of scale insects, by forming an impervious coating which effectually smothers the insects treated. These resin washes vary in efficacy according to the insect treated. Experience has shown that the best formula for the red scale (*Aonidia aurantii* Maskell) and its yellow variety (*A. citrinus* Coquillett) is as follows:

Resin	av.lb. 3½
Caustic soda	av.lb. 1
Fish oil	fl.oz. 8
Water to make	gal. 20

The necessary ingredients are placed in a kettle and a sufficient quantity of cold water

added to cover them; they are then boiled until dissolved, being occasionally stirred in the meantime, and, after the materials are dissolved, the boiling should be continued for about an hour, and a considerable degree of heat should be employed, so as to keep the preparation in a brisk state of ebullition—cold water being added in small quantities whenever there are indications of the preparation boiling over. Too much cold water, however, should not be added at one time or the boiling process will be arrested and thereby delayed; but, by a little practice the operator will learn how much water to add so as to keep the preparation boiling actively. Stirring the preparation is quite unnecessary during this stage of the work. When boiled sufficiently it will assimilate perfectly with water, and should then be diluted with the proper quantity of cold water, adding it slowly at first, and stirring occasionally during the process. The undiluted preparation is pale-yellowish in color, but by the addition of water it becomes a very dark brown. Before being sprayed on the trees it should be strained through a fine wire sieve, or through a piece of Swiss muslin, and this is usually accomplished when pouring the liquid into the spraying tank, by means of a strainer placed over the opening, through which the preparation is introduced into the tank.

The preparing of this compound will be greatly accelerated if the resin and caustic soda are first pulverized before being placed in the boiler, but this is quite a difficult task to perform, and is unnecessary.

This insecticide may be applied at any time during the growing season.

A stronger wash is required for the San Jose scale (*Aspidiotus perniciosus* Comstock), and the following gives the best results:

Resin	av.lb. 6
Caustic soda	av.oz. 20
Fish oil	fl.oz. 15
Water, enough to make	gal. 20

Place all the ingredients in a kettle and cover with water to the depth of 4 or 5 inches, boil briskly for about 2 hours, or until the compound can be perfectly dissolved with water. When this stage is reached the kettle should be filled up with water, care being taken not to chill the wash by adding large

quantities of cold water at once. It may be thus diluted to about 8 gallons, the additional water being added from time to time as it is used.

- This preparation should only be applied during winter or during the dormant period. Applied in the growing season, it will cause the loss of foliage and fruit.

In the application of both these washes a very fine spray is not essential, as the object is not simply to wet the tree, but to thoroughly coat it over with the compound, and this can be best accomplished by the use of a rather coarse spray, which can be thrown upon the tree with considerable force.

For Subterranean Insects:

Recent experiments have shown the practical value of the resin compounds against the grape phylloxera, and they will also be applicable to the apple-root louse and other underground insects. The cheapest, and at the same time one of the most satisfactory compounds experimented with is the following:

Caustic soda.....	av.lb. 1
Resin	av.lb. 8
Water to make	gal. 10

Dissolve the soda over fire with 1 gallon of water, add the resin, and after it is dissolved, and while boiling add water (slowly) to make 10 gallons of compound. For use dilute to 100 gallons. Excavate basins about the vines 6 inches deep and about 2 feet in diameter, and apply to each vine 5 gallons. The result will be more satisfactory if the treatment is made early in the spring, so that the rain of the season will assist in disseminating the wash about the roots.

The kerosene emulsion made according to the formula given above is also applicable to certain underground insects in cases where it will not prove too expensive; as, for instance, the grape phylloxera, or where white grubs are infesting a valuable lawn. It may then be used in the proportion of 1 part of the emulsion to 15 gallons of water, applied liberally to the soil, and afterward washed down at frequent intervals with large quantities of water for several days. This can be done only where there is plenty of water at

hand, but will be found of great value in special cases.

In other cases carbon bisulphide may be used for specific and local underground forms. Nests of ants, for instance, may be destroyed by pouring an ounce of this substance into several holes, covering them with a wet blanket for 10 minutes, and afterward exploding the vapor at the holes with a torch. Against onion, cabbage, and radish maggots this substance may also be used, by punching a hole with a sharp stick at the base of the plant and pouring in a teaspoonful of the liquid, covering afterward with earth.

The Arsenites:

These poisons (paris green or london purple) are of the greatest service against all mandibulate insects, as larvæ and beetles, and they furnish the most satisfactory means of controlling most leaf-feeders, and the best wholesale remedy against the codling moth. Caution must be used in applying them on account of the liability of burning or scalding the foliage.

The poisons should be thoroughly mixed with water at the rate of from 1 pound to 100-250 gallons of water, and applied with a force-pump or hand spray-nozzle. In preparing the wash it will be best to first mix the poison with a small quantity of water, making a thick batter, and then dilute the latter and add to the reservoir or spray-tank, mixing the whole thoroughly. When freshly mixed, either london purple or paris green may be applied to apple, plum and other fruit trees (except the peach) at the rate of 1 pound to 150-200 gallons, the latter amount being recommended for the plum, which is somewhat more susceptible to scalding than the apple. White arsenic does little if any injury at the rate of 1 pound to 50 gallons of water. It has been shown, however, that when allowed to remain for some time (two weeks or more) in water the white arsenic acts with wonderful energy, scalding when used at the rate of 1 pound to 100 gallons from 10 to 90 per cent of the foliage. The action of the other arsenites remains practically the same, with perhaps a slight increase in the case of london purple.

With the peach, these poisons, when ap-

plied alone, even at the rate of 1 pound to 300 or more gallons of water, are injurious in their action, causing the loss of much of the foliage.

By the addition of a little lime to the mixture, london purple and paris green may be safely (applied at the rate of 1 pound to 125 to 150 gallons of water) to the peach of the tenderest foliage, or in much greater strength to strong foliage, such as that of the apple or most shade trees.

Whenever, therefore, the application is made to tender foliage, or when the treating with a strong mixture is desirable, lime water, (milky, but not heavy enough to close the nozzle) should be added at the rate of about 2 gallons to 100 gallons of the poison.

Pure arsenic, however, should never be used with lime, as the latter greatly increases its action.

With the apple, in spraying for the codling moth, at least two applications should be made—the first on the falling of the blossoms, the apples being about the size of peas, and the second a week or 10 days later—but the poison should never be applied after the fruit turns down on the stem, on account of the danger of the poison collecting and remaining permanently in the stem cavity.

For the plum curculio on the plum, cherry, peach, etc., two or three applications should be made during the latter part of May and the first half of June. In the case of most leaf-feeders, spray on the first indication of their presence.

The following formula may also be employed:

Paris green or london purple.	
.....av.oz. 8 to 4	
Fresh lime.....av.oz. 8	
Flour.....av.oz. 16	
Water.....gal. 45	

Shake the lime in a gallon of water and rub till smooth; then strain and stir in the arsenite. Boil the flour to a thin paste. Dilute the arsenite with the necessary water, then add the flour paste and use. This is the standard remedy for all kinds of leaf-gnawing insects. A good sample of london purple is just as effective as paris green, and usually costs less. The lime is added to neutralize any soluble arsenic compounds, and the flour

is used to make the arsenite adhere better to the foliage.

Caution necessary in use.

The relative susceptibility of apple, plum and peach has just been indicated under the head of arsenical poisons, and these remarks apply equally well to the use of the kerosene emulsions. In the case of other plants thorough experiments are necessary, and all insecticides should be first used in comparatively high dilution. In general it may be said that tender young foliage is more susceptible, and must be carefully treated. Thin-leaved pilose plants are more readily injured, while thick leaved, glabrous species are least affected. Annual plants, such as cabbages and other garden vegetables, are more susceptible than perennials, but in the case of root crops, such as beets, turnips, radishes and potatoes, there is not the same need of caution as to damage to foliage. Damage to foliage is not shown at once, and, in case of rain following an application, another application should not be made for several days. Fruit trees should not be sprayed with arsenical poison before the blossoms fall, on account of the danger of poisoning honey bees.

Insect Powders.

I.

Insect powder.....av.oz. 14	
Quassia, fine powder.....av.oz. 6	

II.

Insect powder.....av.oz. 14	
Quassia, fine powder.....av.oz. 4	
Naphthalin.....av.oz. 2	

III.

Insect powder.....av.oz. 8	
Borax, powder.....av.oz. 8	
Oil of cedar.....fl.oz. 1	
Oil of pennyroyal.....fl.dr. 2	

IV.

Persian insect powder.....av.oz. 8	
Borax.....av.oz. 8	
Sulphur.....av.oz. 4	
Oil eucalyptus.....fl.dr. 2	
Mix. Excellent for cockroaches.	

V.

Paris green.....av.oz. 2	
Plaster paris.....av.oz. 2	
Borax, powdered.....av.oz. 12	
German chamomile.....av.oz. 1	
Powder the chamomile flowers and mix with the other powders. Used by professional bug exterminators.	

Javelle Water.

Bicarbonate of sodium.....	av.oz. 8
Chlorinated lime.....	av.oz. 2
Water.....	fl.oz. 16

Boil the soda in the water for a few minutes, add the lime, and when cold, strain.

Jeweler's Rouge. (Colcothar.—Crocus Martis.)

This is usually prepared by heating ferrous sulphate to a high temperature, but a simpler method is this:

Make a tolerably strong solution of ferrous sulphate, also one of oxalic acid, filter each; add the former to the latter, with constant stirring, let stand a few hours, collect the precipitate, wash it thoroughly with water, dry, and expose to the direct flame until there is no further change of color.

Lacquer for Brass.

Before applying lacquer to brass it must be well cleaned. This may be done by immersing in a bath of strong caustic potash, followed, after rinsing, by a bath of dilute nitric acid. Rinse in water, rub dry with chamois, and place on hot iron plate, or on top of stove, until warm. Then apply the lacquer with a soft camel's-hair pencil, making all the strokes in one direction. Some little practice is necessary in order to apply the lacquer nicely.

Similar to the lacquers are the varnishes, both being resinous solutions, intended as protectives for metals, wood, etc.

Lacquer for Brass, Dark.

I.	
Turmeric, powder.....	gr. 480
Annatto, best.....	gr. 120
Saffron, Spanish.....	gr. 120
Shellac.....	av.oz. 8½
Alcohol.....	fl.oz. 16

Digest the first 3 ingredients with the alcohol for 24 hours; then dissolve the shellac in the liquid, and strain.

II.	
Shellac.....	av.oz. 2½
Mastic.....	av.oz. ¼
Sandarac.....	av.oz. ¼
Aloes.....	av.oz. ½
Turmeric, powder.....	av.oz. 1¼
Saffron.....	gr. 60
Dragon's blood.....	av.oz. ¼
Venice turpentine.....	gr. 60
Alcohol.....	fl.oz. 25

Mix; macerate for several days, agitating occasionally, and filter.

III.

Seed lac.....	av.oz. 3
Turmeric, powder.....	av.oz. 1
Dragon's blood, powder.....	av.oz. ¼
Alcohol.....	fl.oz. 16

Macerate a week, frequently shaking; decant or filter.

Lacquer for Brass, Gold.**I.**

Orange shellac.....	av.oz. 8
Alcohol.....	fl.oz. 12
Water.....	fl.oz. 4

Dissolve with heat. The solution is milky from the insoluble waxy portion of the shellac. Clarify by shaking with an ounce of precipitated chalk, or by shaking with an equal volume of benzin. The benzin will separate from alcohol of this strength, and may be poured off.

II.

Gum copal.....	av.oz. 2
Shellac.....	av.oz. 1
Boiled linseed oil,.....	fl.oz. 2
Oil of turpentine.....	fl.oz. 10

Melt the copal and shellac; add the linseed oil, remove the vessel from the fire, and gradually add the turpentine.

Lacquer for Brass, Red.**I.**

Alcohol.....	fl.oz. 16
Dragon's blood.....	av.oz. ½
Annatto.....	av.oz. 2½
Sandarac.....	av.oz. 4
Oil of turpentine.....	fl.oz. 2

Macerate, with frequent agitation, for a week; decant and filter.

II.

Sandarac.....	av.oz. 6
Mastic.....	av.oz. 3
Balsam of copaiba.....	av.oz. 1
Venice turpentine.....	av.oz. 1½
Oil of turpentine.....	fl.oz. 2
Absolute alcohol.....	fl.oz. 18
Shellac.....	av.oz. 2½
Dragon's blood.....	av.oz. 25
Alcohol.....	fl.oz. 25

Dissolve the sandarac, mastic, copaiba and venice turpentine in the absolute alcohol and oil, and mix with a filtered macerate of the dragon's blood and shellac in the alcohol.

III.

Shellac.....	av.oz.	5
Sandarac.....	av.oz.	2
Mastic.....	av.oz.	2
Gamboge.....	av.oz.	$\frac{1}{2}$
Dragon's blood.....	av.oz.	$\frac{1}{2}$
Annatto.....	av.oz.	$\frac{1}{2}$
Red saunders.....	av.oz.	$\frac{1}{2}$
Venice turpentine.....	av.oz.	$1\frac{1}{2}$
Alcohol.....	fl.oz.	25

Mix, macerate for several days, and filter.

Lacquer for Leather, Black.

Shellac.....	av.oz.	$1\frac{1}{4}$
Sandarac.....	gr.	180
Mastic.....	gr.	90
Venice turpentine.....	av.oz.	$\frac{3}{4}$
Alcohol.....	fl.oz.	16

Mix and dissolve, and color deep black with nigrosin.

Lacquer for Tin.

Alcohol.....	fl.oz.	16
Turmeric.....	av.oz.	1
Saffron.....	gr.	80
Dragon's blood.....	gr.	160
Red saunders.....	gr.	40
Shellac.....	av.oz.	2
Sandarac.....	av.oz.	$\frac{1}{2}$
Mastic.....	av.oz.	$\frac{1}{2}$
Balsam of fir.....	av.oz.	$\frac{1}{2}$

Reduce the drugs to powder; mix all, macerate for 7 days, agitating occasionally, and filter.

Leather, Dyeing of.

See "Dyeing of Leather."

Leather Polish, Blacking or Dressing.

See "Harness Blackings," "Shoe Grease," "Shoe Polish," "Shoe Dressing," and "Shoe Varnish."

Lice Exterminators.

Pharmacists should always avoid selling fish berries (cocculus), on account of their poisonous nature, while mercurial ointment is not always desirable. The following mixture is highly recommended for killing lice and similar vermin.

I.

Borax.....	gr.	360
Glycerin.....	fl.oz.	1
Decoction of quassia (1 in 5).....	fl.oz.	15

Mix and dissolve.

Apply to the head once daily

II.

Naphthalin.....	av.oz.	$8\frac{1}{2}$
White wax or ceresin.....	av.oz.	$1\frac{1}{2}$
Cocoanut oil.....	av.oz.	$5\frac{1}{4}$
Petrolatum.....	av.oz.	$5\frac{1}{4}$
Oil of bergamot.....	fl.dr.	$1\frac{1}{2}$
Oil of cloves.....	fl.dr.	$1\frac{1}{2}$
Oil of cinnamon.....	fl.dr.	$1\frac{1}{2}$
Oil of lemon.....	m.	50

Melt the fats, add the naphthalin, stir until the latter is dissolved, allow to cool, and incorporate the oils.—H.

Use like the preceding.

III. The following may be recommended, especially as a powder for exterminating lice on the body.

Sabadilla, powder.....	av.oz.	16
Orris, powder.....	av.oz.	4

Linoleum, for Polishing.

I.

Yellow wax.....	av.oz.	1
Carnauba wax.....	av.oz.	2
Oil of turpentine.....	fl.oz.	10
Benzin.....	fl.oz.	10

Melt the two waxes, carefully add the oil and benzin, and stir until solid.—D.

II.

Yellow wax.....	av.oz.	5
Oil of turpentine.....	fl.oz.	11
Amber varnish.....	av.oz.	5

Melt the wax, add the oil, and then the varnish.

Apply with a woolen rag.—D.

Linseed Oil, Boiled.

Linseed oil.....	gal.	1
Litharge, powder.....	av.oz.	16

Mix, heat and simmer, with frequent stirring, until a pellicle begins to form; remove the scum, and when it has become cold and has settled, decant the clear portion.

Lubricants.

See "Axle Greases."

Magnesium Lights.

See under "Colored Fires" for such of the fires as contain metallic magnesium.

Marble, Cleansing and Polishing.

The marble of soda fountains may be cleansed with the following:

Sodium carbonate.....	av.oz.	2
Chlorinated lime.....	av.oz.	1
Water.....	fl.oz.	14

Mix well, and apply the mixture (magma)

and liquid) to the marble with a cloth, rubbing well in, and finally rubbing dry. It may be necessary to repeat this operation.

The marble may now be polished by rubbing over with kerosene. This should, however, not be applied to white marble.

To remove grease stains from marble, it is recommended to cover the spot with a little pile of powdered talcum or some fine clay, saturating with benzin, and allowing to remain for some time.

Care must be taken in removing stains or discolorations in marble by the use of chemicals as the polish is liable to be injured. The following powder may be used for cleaning marble:

Common salt.....	av.oz. 8
Pumice stone, powder.....	av.oz. 4
Chalk, powder.....	av.oz. 4

Mix, moisten with water, and rub over the marble, allowing to remain for some time; then wash off with soap and water.

Marble Busts, to Clean.

First free from all dust and then wash with very weak hydrochloric acid; do not use soap.

Matches, Japanese.

These can be imitated very closely by making a mixture of 5 parts of lampblack, 11 parts of sulphur and 27 parts of gun powder, rubbing each substance separately to an impalpable powder, and making into a paste with absolute alcohol. Dip the sticks into the paste and let dry slowly, away from a fire. Another plan is to add only enough alcohol to make a doughy mass and to roll this out into a sheet about $\frac{1}{4}$ -inch thick. Cut into cubes and let dry as before. When desired for use, a cube is stuck into a split straw or splints of wood, and lit. After burning a moment the material collects in a ball of molten matter which sends out sparks and scintillations much more brilliant than those of the matches.

Mathematics.

To calculate the area of a circle, square the diameter, and multiply by 0.7854 (or 11-14); or multiply the diameter by the circumference, and divide by 4.

To estimate the capacity of a can or any

vessel with straight sides (of the same diameter throughout), multiply the diameter by 0.7854, and this result by the height or depth of the can.

Where the vessel is larger at one end than at the other, and the sides are straight, add the ends together and divide by 2 to get the mean diameter, and proceed as before.

To measure the cubic contents of a barrel or keg with curved staves, add the diameter at the bung and that of the head (both measured from the inner rim of the staves) together; divide by 2 to get the mean diameter; multiply as before by 0.7854, and finally multiply by the length of the stave, taken from the inside of the heads. This latter process is not absolutely mathematically correct, but is so close as to answer for all practical purposes.

Mildew, To Remove.

Mix equal parts of soft soap and starch, add half as much salt and the juice of a lemon. Apply this to both sides of the fabric and expose to sunlight.

Molds for Taking Impressions.

I.

Spermaceti, stearin, or beef tal-	
low	av.oz. 8
White wax.....	av.oz. 8

For taking impression of medals, etc.

II.

Dark resin.....	av.oz. 12
Beef tallow.....	av.oz. 8

For coarse work, such as architectural ornaments.

III. Flexible or elastic molds may be made of gutta percha softened in boiling water, and after being freed from moisture, pressed strongly against the objects to be copied.

The same can be produced by the use of gelatin or glue, which has been dissolved in sufficient hot water and passed over the object previously oiled.

Mosquito Essence. (Mosquito Tincture or Lotion.)

I.

Eucalyptol (or oil of eucalyptus).....	fl.oz. 1½
Acetic ether.....	fl.dr. 6
Cologne water	fl.oz. 6
Tincture of insect powder (1	
in 5).....	fl.oz. 7½

Diluted with from 3 to 6 parts of water.

This may be used as an application to the skin to prevent the attacks of mosquitoes. It may also be sprayed about the room to destroy or expel mosquitoes.

II.

Carbolic acid.....	fl.oz. 1
Oil of peppermint.....	fl.oz. 2
Oil of camphor, volatile.....	fl.oz. 2
Glycerin.....	fl.oz. 2
Oil of tar.....	fl.oz. 4
Olive oil.....	fl.oz. 4

III.

Ammonia water.....	fl.dr. 11
Glycerin.....	fl.oz. 2
Oil of pennyroyal.....	fl.oz. 4
Olive oil.....	fl.oz. 6

IV.

Carbolic acid.....	fl.oz. 1
Oil of pennyroyal.....	fl.oz. 2
Spirit of camphor.....	fl.oz. 2
Glycerin.....	fl.oz. 2
Oil of tar.....	fl.oz. 4
Lard oil.....	fl.oz. 4

This is an effective application for keeping flies and mosquitoes off horses.

V. The following may be sold as "essence of pennyroyal":

Oil of pennyroyal.....	fl.oz. 1
Alcohol.....	fl.oz. 15

VI. The following, known as "fulvis capu-cinorum," is also useful:

Sabadilla.....	av.oz. 2
Cocculus indicus.....	av.oz. 2
Parsley seed.....	av.oz. 2
Anise seed.....	av.oz. 2
Tobacco powder or snuff.....	av.oz. 2

Mosquito Pastilles.

I.

Carbolic acid.....	fl.dr. 6
Potassium nitrate, powder.....	av.oz. 1½
Insect powder.....	av.oz. 5
Charcoal, powder.....	av.oz. 10

Make a paste with powdered tragacanth and water and mold into pastilles.

II.

Thyme leaves, coarse powder.....	av.oz. 2
Lavender flowers.....	av.oz. 2
Insect powder.....	av.oz. 2
Potassium nitrate, powder.....	av.oz. 1½
Potassium chlorate, powder.....	gr. 72
Tragacanth, powder.....	gr. 175

Mix well, add sufficient water to form a mass, divide into pastilles, and dry.

Mosquito Powder.

I.

Eucalyptol (or oil of eucalyptus).....	fl.oz. 1
Talcum, powder.....	av.oz. 2
Starch, powder.....	av.oz. 17

Mix well and sift.

This powder is to be rubbed into the exposed parts of the body to prevent the attacks of the insects.

The mixture may be rendered more effective by replacing 50 per cent or more of the starch by naphthalin.

II.

Oil of pennyroyal.....	fl.dr. 4
Naphthalin.....	gr. 120
Starch.....	av.oz. 16

Mix well and sift.

This is to be used like the preceding

Moth Essence or Tincture.

I.

Oil of patchouly.....	drops 15
Oil of mirbane.....	fl.dr. 2¼
Naphthalin.....	gr. 300
Carbolic acid, crystal.....	gr. 300
Camphor.....	av.oz. 1¼
Oil of turpentine.....	fl.oz. 2
Alcohol.....	fl.oz. 27

Mix, allow to stand for several days, and filter.

In using, moisten blotting or other absorbent paper with this liquid; then lay the paper between the goods to be protected, and then pack securely in a suitable receptacle.—D.

II.

Capsicum.....	av.oz. 8½
Alcohol.....	fl.oz. 36
Oil of turpentine.....	fl.oz. 2
Naphthalin.....	gr. 360
Camphor.....	gr. 360
Oil of cloves.....	fl.dr. 2½

Mix the capsicum with the alcohol and oil of turpentine, macerate for 8 days, filter; to the filtrate add the remaining ingredients, and dissolve.

This is to be used like the preceding.—D.

Moth Paper.

I.

Naphthalin.....	av.oz. 4
Paraffin wax.....	av.oz. 8

Melt together, and while still warm paint with a rather broad brush upon unsized paper.—H.

II.

Naphthalin	av.oz. 4
Carbolic acid.....	av.oz. 2
Ceresin.....	av.oz. 2

Melt together, and spread the mixture by means of a wide brush upon unsized paper laid upon a hot surface, care being taken that this is not done near a light or fire.

If it is desired to avoid the use of a hot surface, and thus preclude any possibility of contact with light or fire, the mixture may be diluted with 1 fluidounce of alcohol. As this does not dissolve the ceresin, the mixture must be well stirred with the brush before each application.—D.

III.

Naphthalin	av.oz. 4
Camphor	av.oz. 2
Ceresin	av.oz. 2
Oil of mirbane	m. 40

Prepare like the preceding.—D.

Moth Powder.

I.

Naphthalin	av.oz. 8
Starch	av.oz. 2
Orris root.....	av.oz. 2
Patchouly herb.....	av.oz. 2
Camphor	av.oz. 2

Reduce all to powder and mix well.

II.

Patchouly	av.oz. 5
Valerian.....	av.oz. 2½
Camphor	av.oz. 2
Naphthalin.....	av.oz. 1
Scotch snuff.....	av.oz. 1
Orris root.....	av.oz. 2½
Sumbul root.....	av.oz. 2½
Oil of cassia.....	fl.oz. 1
Oil of eucalyptus.....	fl.oz. 1

Reduce the solids to fine powder and incorporate with the remaining ingredients.

III.

Insect powder.....	av.oz. 5
Camphor.....	av.oz. 5
Colocynth.....	av.oz. 5
Oil of lavender.....	fl.dr. 2½

IV.

Naphthalin	av.oz. 8
Capsicum.....	av.oz. 8
Insect powder.....	av.oz. 16
Oil of rosemary.....	fl.dr. 1

Reduce the capsicum and naphthalin to fine powder and mix well with the other ingredients.

Moth Species.

Patchouly, cut.....	av.oz. 2
Rosemary, cut.....	av.oz. 4
Thyme, cut.....	av.oz. 4
Sage, cut.....	av.oz. 4
Naphthalin	av.oz. 4
Oil of mirbane.....	fl.dr. 4
Oil of turpentine.....	fl.oz. 1
Alcohol	fl.oz. 10

Dissolve the naphthalin and oils in the alcohol by the aid of heat, and sprinkle the solution while hot upon the mixed herbs or leaves. Introduce the mixture into bags of suitable size and lay them between the clothes to be preserved, which should be firmly wrapped, securely packed, and kept in a cool place.—D.

Mouse Destroyers.

See "Raticides" and "Phosphorus Pastes."

Mucilages and Pastes.

I.

Tragacanth	av.oz. 1
Gum arabic.....	av.oz. 1
Water, boiling.....	fl.oz. 64
Carbolic acid.....	fl.dr. 1

II.

Tragacanth.....	av.oz. 1
Dextrin, yellow.....	av.oz. 8
Water.....	fl.oz. 32

Mix; allow the tragacanth to soften, and add more water, if desired. The mixture may be preserved by the addition of carbolic acid or of some essential oil, such as oil of cloves or wintergreen.

III.

Lime, slaked.....	av.oz. 1
Sugar, granulated.....	av.oz. 4
Glue.....	av.oz. 3
Water	fl.oz. 12

Dissolve the sugar in the water, add the lime, heat nearly to boiling, set aside for several days, decant the clear liquid, and in it dissolve the glue by the aid of a moderate heat.

IV. Take the curd of skim milk (carefully freed from cream), wash it thoroughly, and dissolve it to saturation in a cold concentrated solution of borax.

V.

Dextrin, yellow.....	av.oz. 4
Water	fl.oz. 8

Heat the water, add the dextrin gradually with constant stirring, and continue the heat

until the dextrin is dissolved. One fluidounce of acetic acid may be added to the water before heating, and to the solution may be added the same amount of alcohol to insure preservation. However, neither one is necessary if carbolic acid or an essential oil, like oil of cloves or wintergreen be added. This mucilage may be thinned when it becomes thickened by exposure, by dilution with water. A small amount of glycerin added to the mucilage will prevent curling of the paper.

VI.

Dextrin, yellow.....	av.oz. 4
Water	fl.oz. 6
Syrupy glucose.....	av.oz. ½
Aluminium sulphate (not alum).....	gr. 120

Mix the dextrin with the water, add the glucose and aluminium sulphate, and heat the mixture to about 90 degs. C., when it will become transparent and thin.

VII.

Rye flour.....	av.oz. 4
Acacia, powder.....	av.oz. ½
Water	fl.oz. 24
Glycerin	fl.oz. 1
Oil of cloves.....	drops 20

Rub the flour and acacia to a smooth paste with 8 fluidounces of cold water, strain through cheese cloth, add the mixture to the remainder of the water (also cold) and apply heat until thickening ensues; then allow to cool and add the remaining ingredients.

VIII.

Rye flour.....	av.oz. 4
Water.....	fl.oz. 16
Nitric acid.....	fl.dr. 1
Oil of cloves.....	drops 10
Glycerin	fl.oz. 1

Mix the flour and water, make a smooth paste, strain through cheese cloth, add the acid, heat until suitably thickened, and the other ingredients when cool.

IX.

Wheat flour.....	av.oz. 4½
Nitric acid	fl.dr. 1
Oil of cloves.....	drops 5
Boric acid.....	gr. 10
Water	fl.oz. 16

Mix the flour thoroughly with the boric acid and water, and strain through a sieve to avoid lumps; add the nitric acid and heat, with constant stirring, until the mixture has thickened. When nearly cold, add the oil of cloves and stir.

X.

Wheat flour.....	av.oz. 16
Corn starch.....	av.oz. 1
Alum.....	gr. 120
Borax	gr. 120
Water.....	sufficient

Mix the solids with cold water, make a smooth mixture, add boiling water to this, stirring briskly until the whole is of about the required consistency; apply heat until a uniform paste is produced, and when cold add about ½ fluidram of fusel oil, which will preserve it indefinitely.

XI.

Tragacanth, powder.....	gr. 240
Acacia, powder	gr. 240
Wheat flour.....	gr. 480
Salicylic acid.....	gr. 80
Water	fl.oz. 12
Oil of wintergreen.....	drops 3

Mix all but the oil; make a smooth paste, bring this to the boiling point, simmer for 20 minutes, stirring frequently, allow to cool, and add the oil.

XII.

Dextrin, white.....	av.oz. 4
Acacia.....	av.oz. 2
Sugar	av.oz. 1
Water	fl.oz. 12

Dissolve the acacia and sugar in 6 fluidounces of cold water, and the dextrin in remainder of the water by the aid of heat; mix the solutions when cool.

XIII.

Starch.....	av.oz. 5
Nitric acid	fl.dr. 2½
Gum arabic.....	av.oz. 5
Sugar	av.oz. 1
Water.....	sufficient

Make a smooth mixture of the starch, 2 fluidrams of acid, and 6 fluidounces of water, and set aside in a warm place for 48 hours, stirring frequently; then boil the mixture until it becomes thick and translucent, dilute with water, if necessary, and strain. Now dissolve the gum and sugar in 5 fluidounces of water, add the remainder of the acid, heat to boiling, and add this mixture to the preceding.

This mucilage may be used by bookbinders.

XIV. Mucilage may be made to adhere to tin by first roughening the latter by rubbing with emery paper. Or to the mucilage may

be added a small amount of solution of anti-mony chloride.

Mucilage, Stick or Bar.

Mucilage, in the form of sticks, is much used in architectural and mechanical drawing for attaching the drawing paper to a board, and is generally spoken of as mouth or lip glue. In making such a glue, only a very pure form of gelatin or glue should be used, as the least odor would prove disgusting when the glue is moistened with the lips. Sugar is generally added, not for the purpose of sweetening the glue, but in order to render it more easily soluble when it is to be used. This probably is brought about by the sugar preventing the glue from becoming too dry and hard. Some even use a good quality of glue without any admixture whatever, but this requires more rubbing when it is applied, although it holds better than that to which sugar has been added. The sugar may be replaced by glycerin.

I.

Glue, best	av.oz. 4
Isinglass	av.oz. 1
Brown sugar	av.oz. 1
Water	sufficient

Soak the glue and isinglass in water until soft. Pour off the superfluous water, and add the sugar. Melt the whole together with a gentle heat and allow to evaporate until quite thick. Pour into a flat-bottomed dish that is quite cold, preferably placed on ice, and when solid cut the glue into the desired shape.

II.

Isinglass	av.oz. 1
White glue	av.oz. 1
Rock candy	gr. 120
Tragacanth	gr. 120
Water	fl.oz. 1

Boil the whole together until when cold the mixture has the appearance of glue. Then form into rolls for use.

If desired the glue, made according to either of the above formulas, may, while hot, be poured into suitable molds that have been previously well chilled.

III.

Glue, best	av.oz. 12
Sugar	av.oz. 5
Water	sufficient

Soak the glue in water over night, and dissolve it by heat in the smallest possible quantity of water. Add the sugar to the hot solution, and dry the composition, like jujube paste, in oiled molds.

IV.

Gelatin	av.oz. 4
Sugar, white	av.oz. 2
Water	fl.oz. 6

Mix, dissolve by aid of heat, and continue heating until the mixture weighs about 8 av. ounces, when it may be formed into sticks.

Nutrient Gelatin.

Gelatin	av.oz. 1
Extract of beef	gr. 175
Distilled water	fl.oz. 20

Dissolve the gelatin and extract in the water, filter, heat to boiling, and divide among test tubes which have previously been treated with boiling water. Close the cylinders with plugs of cotton, which has previously been heated for some time to a temperature of 150 degs. C. then set aside for 4 weeks.

Only the gelatin mixture which remains clear is to be used; if it becomes turbid, it is to be boiled again and again until it remains clear.

Another nutrient gelatin is produced by dissolving 1 part of gelatin in 20 parts of infusion of hay.—D.

Oil for Watchmakers.

Place a clean strip of lead in a small white glass bottle filled with pure almond (or olive) oil and expose it to the sun's rays at a window for some time, till a curdy matter ceases to be deposited and the oil has become quite limpid and colorless. Used for fine work; does not become thick by age. The finer grades of paraffin oil also are used, at least for clocks.

Paint, Glossy or White Enamel.

Orange shellac	av.oz. 15
Copal resin	av.oz. 5
Venice turpentine	av.oz. 1
Linseed oil, raw	fl.oz. 4
Alcohol	pints 10

Mix, and add 4 or 5 pounds of zinc white or other white pigment.

Another enamel paint may be made by mixing the pigment with a good varnish.

Paint Eradicators.

See "Cleansing Creams," "Cleansing Liquids," "Benzin Jelly," and "Stains, Removal of."

Paper, Baromet^r or Hygrometer.

See "Baromet^r Paper."

Paper, Blue Print.

The mixture which is to be applied to the paper consists of 2 (sometimes 3) solutions which are to be mixed just prior to use.

I.**No. 1.**

Red prussiate of potassium...av.oz. 1
Distilled water.....fl.oz. 10

No. 2.

Citrate of iron and ammonium.av.oz. 3
Distilled water.....fl.oz. 10
Gum arabic or dextringr. 120

Keep these solutions in separate well-stoppered bottles, which exclude actinic light. In using, mix equal parts of Nos. 1 and 2.

In preparing the sensitized paper, take a solid, firm paper, free from impurities, and apply the solution to the surface of the paper with a soft sponge or a broad, soft brush, being careful not to have the sponge or brush charged too heavily with the solution, or else the paper will have a streaked appearance, which will show in the finished print. Go over the surface of the paper in two directions at right angles to each other so as to insure an even coating. The paper must be allowed to dry in the dark, and in a horizontal position.

II.**No. 1.**

Iron citrate, soluble.....gr. 96
Distilled water, enough to make.fl.oz. 1

No. 2.

Red prussiate of potashgr. 72
Distilled water, enough to make.fl.oz. 1

No. 3.

Potassium bichromate.....gr. 5
Distilled water.....fl.oz. 1

Mix Nos. 1 and 2, add No. 3; filter quickly, and use immediately. The iron citrate should be in scales, free from powder, and should not have been exposed to light. The prussiate must also be free from any adherent powder.

To coat the paper.—This must be done by gas light. Pour some of the solution into a

saucer, dip a soft pad of absorbent lint into it and pass quickly across the paper; again dip the pad in solution and pass across the paper from where you left off. When all the paper has been thus coated take an artist mop varnish brush and remove the excess of liquid.

Paper, Carbolized.

Carbolized paper, suitable for the preservation of furs, etc. from moths, can be readily prepared by applying a strong solution of carbolic acid, with a brush or sponge to any unsized paper. A heavy paper will absorb more, and consequently last longer. The paper should be kept in close boxes until wanted, and the consumer directed to place the sheets freely among the articles to be protected, and wrap them tightly in ordinary paper.

Carbolic paper may also be prepared as follows:

Petrolatumav.oz. 4
Paraffin wax.....av.oz. 4
Carbolic acid.....av.oz. 2

Melt the paraffin and petrolatum, add the carbolic acid, allow to cool and solidify, and with this prepared carbolized paper, as directed for making waxed and ceresin paper.—D.

Paper, Ceresin.

This may be prepared similarly to waxed paper.

Paper, Copying.

Make a stiff ointment with lard and black lead or lampblack, and smear it thinly and evenly over soft writing paper by means of a piece of flannel; let remain for a day, and wipe off the superfluous grease. Petrolatum may be substituted for lard, and forms the "Manifold Writer" of the stationers.

Paper, Oiled.

Brush sheets of paper over with boiled oil and suspend them on a line to dry.

Paper, Paraffined.

This may be prepared like waxed paper, or the paper may be drawn through melted paraffin; or, a better way is to melt 8 av. ounces of paraffin, remove from the fire, add 16 fluid-ounces of benzin; draw the paper through this, and then dry.

Paper, Parchment.

See "Parchment Paper."

Paper, Razor.

See "Razor Paper."

Papers, Test.

See "Test Papers."

Paper Tracing.**I.**

Apply with a brush a varnish compound of equal parts of balsam of fir and oil of turpentine to smooth unsized white paper, and hang up the sheets to dry.

II.

Rub the paper with a mixture of equal parts of cottonseed oil and oil of turpentine; dry immediately, by rubbing it with wheat flour, and then hang up for 24 hours to dry. If washed over with ox-gall, and dried it may be written upon with ink or water colors.

III.

Lardav.oz. 6
Yellow wax.....av.oz. 1
Lampblack.....av.oz. 1

Melt the wax, add the lard, thoroughly incorporate the lampblack, making a smooth mixture by trituration, and, while still in a fluid condition apply this mixture to suitable paper by means of a brush.

Paper, Waxed.

Place strong white paper on a hot iron plate and rub it well with a lump of white wax, the excess to be removed by means of a cloth pad.

Paper, Wrapping, to Cut.

Wrapping paper of the size usually employed in pharmacies, viz., 24 x 36, may be cut to suit the various sizes of bottles, as follows, according to Jacoby's gauge: Eight ounce, 9 x 10 inches; 6 ounce, 8 x 9 inches; 4 ounce, 7½ x 8 inches; 3 ounce, 6½ x 7½ inches; 2 ounce, 6 x 7 inches; 1 ounce, 4¾ x 6 inches, and ½ ounce, 4 x 5 inches.

What remains after cutting a certain size from a sheet may be used for a smaller size, or it may be used for wrapping pill boxes and similar small packages.

Parchment Paper.

Dip white unsized paper for one-half minute in sulphuric acid diluted with one-half its bulk of water, then wash well with weak ammonia water.

Pastes.

See "Mucilages."

Paste, Library.

Rice starchav.oz. 2
Gelatin.....av.oz. ¼
Waterfl.oz. 16
Oil of cloves.....drops 16

Incorporate the starch powder with the water, add the gelatin and heat gently over a water bath until a jelly-like compound results.

Phosphorus Pastes.**I.**

Phosphorusav.oz. 1
Water (38 degs. C.).....fl.oz. 16
Molassesav.oz. 8
Lardav.oz. 16
Oat or barley meal or flour....sufficient

Reduce the phosphorus to fine globules by shaking vigorously with the water contained in a suitable bottle, taking care to have the hand protected with a glove, or the bottle wrapped up in a cloth, for fear of accident. When nearly cool, add the molasses, and then the liquefied lard; finally, incorporate sufficient meal or flour to form a stiff paste.

II.

Phosphorusav.oz. 1
Water, hot.....fl.oz. 4½
Butter, fresh.....av.oz. 6
Starch, powder.....av.oz. 6

Proceed as in the foregoing, finally adding enough boiling water to make a homogeneous paste.

III.

Phosphorusav.oz. 1
Sulphurav.oz. ¼
Mustard, powder.....av.oz. ¼
Sugar, powder.....av.oz. 15
Wheat flour.....av.oz. 20
Carbon bisulphide,
Waterof each, sufficient

Mix the sulphur and phosphorus in a suitable vessel, not metallic; add enough water to cover the two, and then mix with enough carbon bisulphide to dissolve both the phosphorus and sulphur; then add the mustard,

sugar, flour and enough water to make a suitable paste.

IV.

Phosphorus	av.oz. 2
Carbon bisulphide.....	fl.oz. 2
Lard	av.oz. 16
Wheat flour.....	av.oz. 24

Dissolve the phosphorus in the carbon bisulphide; add the lard, and then incorporate the flour.

V.

Phosphorus	av.oz. 6
Sulphur	av.oz. 1
Mustard, powder	av.oz. 2
Sugar	av.oz. 8
Rye flour.....	av.oz. 12
Water	fl.oz. 16

Mix the phosphorus and sulphur with 6 fluidounces of water, triturate until liquefied; add the mustard, sugar and flour, and the remainder of the water.

VI.

Phosphorus	av.oz. 1
Bisulphide of carbon.....	fl.oz. 1
Lard.....	av.oz. 8
Wheat flour.....	av.oz. 12

Dissolve the phosphorus in the bisulphide of carbon, add the lard, and lastly make a uniform paste with the flour. This paste will not ferment and spoil.

Plant Insect Exterminators.

See "Insecticides for Agriculturalists."

Plating with Gold, Silver, Tin, etc.

The deposition of one metal upon another may be made in several ways. What is now the most common and usually most satisfactory method of deposition, generally known as "plating," is by means of the electric current; this method being known as "electroplating." Another method of deposition, which is a very inferior process, is what is technically known as "washing." This consists in the application of a solution of a salt of a metal which is to be deposited by means of a cloth. The coating of metal deposited is so infinitely thin that it very quickly wears away, revealing the inferior material beneath.

I. Gold "washing:"

Gold chloride.....	av.oz. 1
Potassium cyanide.....	av.oz. 8
Distilled water.....	fl.oz. 5
Precipitated chalk.....	sufficient

Dissolve the gold chloride in 1 fluidounce of water, and the potassium in the remainder of the water; mix the two solutions and add enough precipitated chalk to make a thin paste.

After thoroughly cleaning the object to be gilded, and freeing it from grease, etc., apply this paste with a camels-hair pencil evenly over the surface. Let dry slowly at ordinary temperature. When dry, put in an oven and heat to 60 or 70 degs. C. Wash off with clean water, dry and finish by going over the surface with a burnisher.

Silver "washing:"

A.—For brass only.

Silver nitrate.....	gr. 60
Potassium cyanide.....	gr. 360
Precipitated chalk.....	gr. 90
Distilled water.....	fl.oz. 6½

B.—For brass, copper, iron, steel, etc.:

1.

Silver oxyhyposulphite.....	av.oz. ½
Ammonium chloride.....	av.oz. ¼
Distilled water.....	fl.oz. 6

2.

Silver nitrate.....	av.oz. 1¼
Sodium chloride.....	av.oz. 5
Cream of tartar.....	av.oz. 3
Water, distilled.....	sufficient

Dissolve the silver nitrate in the smallest amount of water, add the other ingredients; rub in a mortar to a smooth paste, adding sufficient water. Preserve the mixture from light.

Apply the paste by rubbing on the cleaned copper or brass until the silver layer is thick enough; then wipe with chamois skin.

3.

Silver chloride	gr. 60
Potassium bitartrate	gr. 360
Sodium chloride.....	gr. 180

Mix. The powder is made into a cream with water, and the article to be plated is either covered with the paint by means of a brush or immersed in the mixtures for a short time; then, after being dried, it is rubbed off and the article polished with prepared chalk.—H.

Nickeling:

There is no reliable method of depositing nickel from its cold solution, as in the foregoing cases, but a thin and adhesive coating

may be given articles of brass, iron, etc., by the following process: Boil in a copper vessel a saturated solution of zinc chloride and an equal quantity of water. While boiling add hydrochloric acid, drop by drop, until the precipitate at first thrown down is again completely redissolved. Now add zinc in powder, until the bottom of the kettle is nearly covered with a precipitate of zinc. The bath is now ready for the addition of a salt of nickel, and you may use either the sulphate or the nitrate. Add it in sufficient quantity to give the bath a strong green color. The articles to be nickered are now hung in the bath by means of a zinc wire, or a strip of sheet zinc, and a few pieces of the latter are thrown in along with them. Raise the heat to a strong boil and continue it for several minutes, or until the articles are covered with a bright coating of nickel. The articles should be thoroughly cleaned and free from grease before being put in the bath. When finished, rinse and then rub well with precipitated chalk.

Platinizing:

Platinum chloride, 1 part; sodium chloride, 8 parts; distilled water, 100 parts. Bring to a boil, and put the articles to be platinized, first thoroughly cleaned, in the vessel. Keep at a moderate temperature, and in the course of 8 or 4 hours the platinizing will be completed. Polish with chamois.

There is as yet no known method of depositing aluminium by a process similar to any of the above.

II. Brass scale pans, or any other metallic substance capable of taking a deposit of silver may be plated in various ways. Here is a method recommended by Kayser:

It is absolutely necessary that the article to be plated shall present a perfect metallic surface, free from oxides, dirt, grease, etc.; it must be thoroughly scoured, if necessary, with the intervention of acids, and afterwards carefully washed. It is then to be dipped into a solution prepared by making a saturated aqueous solution of bisulphite of sodium, and adding to the latter so much of a solution of nitrate of silver (30 parts in 100) that there are 6 parts of the silver salt for every 100 of the bisulphite. The follow-

ing would be a more simple way to state the proportions:

Sodium bisulphite.....	av.oz.	10
Distilled water.....	enough to dissolve	
Silver nitrate.....	gr.	264
Distilled water.....	fl.oz.	2

Dissolve and mix.

Allow the article to remain in the mixture until it is properly coated, then take it out; wash it with water in which a little carbonate of sodium had previously been dissolved; finally wash with pure water, and dry in sawdust.

Polishing Paste.

See "Putz Pomades."

Polishing Powders.

Under this heading are mentioned powdery mixtures used in polishing different metals. These powders must always be impalpably fine, particularly such as are used to polish silver and gold ware.

I.

Chalk.....	av.oz.	10
White bole.....	av.oz.	4
Lead carbonate.....	av.oz.	5
Magnesium carbonate.....	av.oz.	1
Iron oxide.....	av.oz.	1

This mixture is best adapted to brass and copper.

II.

Calcined magnesia.....	av.oz.	9
Jeweler's rouge.....	av.oz.	1

This mixture is recommended for polishing silver; it should be used dry.—D.

III.

Calcined magnesia.....	av.oz.	8
Jeweler's rouge.....	av.oz.	8

This mixture is recommended for polishing gold; it should be used dry.—D.

IV.

Magnesium carbonate.....	av.oz.	4
Chalk.....	av.oz.	4
Jeweler's rouge.....	av.oz.	7

Polishes for Shoes and Leather.

See "Blackings," "Shoe Dressings," "Patent Leather Polish," "Shoe Varnish," and "Harness Blackings."

Preservative Fluid.

The composition of Wickersheimer's Preservative Fluid, which is adapted to almost all

purposes (excepting the preservation of animal tissues to be used for food) and which is used in medical colleges, is as follows:

Arsenious acid.....	gr. 90
Potassium carbonate.....	gr. 225
Potassium nitrate.....	gr. 75
Potassium sulphate.....	gr. 90
Sodium chloride.....	gr. 120
Sodium borate.....	gr. 240
Glycerin.....	fl.oz. 18
Wood alcohol.....	fl.oz. 3½
Water.....	fl.oz. 34

Dissolve the arsenious acid and potassium carbonate in 7 fluidounces of the water, using a gentle heat to accelerate the reaction, and add the remaining portion of the water, in which dissolve the other salts; add the glycerin and alcohol.

If large quantities of the liquid are to be used, it will be economical to use methylic alcohol, as ordered in the formula, otherwise common alcohol may be substituted.

Specimens may be preserved by simply immersing in the fluid, or by injecting it into the veins and intestines of the body.

The following is suggested as a substitute for Wickershiemer's preparation:

Salicylic acid.....	gr. 240
Boric acid.....	gr. 300
Potassium carbonate.....	gr. 60
Oil of cinnamon.....	fl.dr. 8
Oil of cloves.....	fl.dr. 3
Glycerin.....	fl.oz. 5
Water, hot.....	fl.oz. 12½
Alcohol.....	fl.oz. 12½

Dissolve the acids and potassium carbonate in the water; when effervescence ceases add the glycerin, and then the oils dissolved in alcohol.

This fluid is not poisonous, and possesses the desirable property of acting as an anti-septic and of having a pleasant odor.—H.

Putz Pomades.

By this term are signified pasty or fatty mixtures intended especially for polishing copper and brass; these mixtures may be used on steel, but should never be used on silver or gold.

The fatty substance present consists of a fixed oil—oleic acid, lard, petrolatum, palm oil, lard oil, etc., mixed with tripoli, rotten stone, emery, jeweler's rouge, pumice stone, etc.; the whole being flavored, as a rule, with

oil of mirbane (nitro-benzol or artificial oil of bitter almonds). The powders must be in a very finely divided condition; it is, in fact, advisable to pass the mixture of fat and powder through a paint mill to insure fineness and smoothness.

I.

Rotten stone.....	av.oz. 16
Stearin.....	av.oz. 8
Cottonseed oil.....	fl.oz. 4
Oil of mirbane.....	enough to flavor

Melt the fats, incorporate the rotten stone with them, and add the oil of mirbane when cool.

II.

Oxalic acid.....	av.oz. ½
Peroxide of iron (jeweler's rouge).....	av.oz. 8
Rotten stone.....	av.oz. 10
Palm oil.....	av.oz. 30
Petrolatum.....	av.oz. 2

Pulverize the acid and add the rouge and rotten stone, mixing thoroughly. Sift to remove all grit; then gradually add the palm oil and petrolatum, and incorporate. Add oil of mirbane or oil of lavender to flavor.

III.

Rotten stone, levigated.....	av.oz. 2
Iron subcarbonate.....	av.oz. 6
Oil of bitter almonds or mirbane.....	enough to flavor
Lard, olive or cottonseed oil.....	enough to form a paste

IV.

Charcoal, fine powder.....	av.oz. 14
Iron oxide (subcarbonate).....	av.oz. 3
Oleic acid.....	av.oz. 6
Stearic acid.....	av.oz. 3
Petroleum.....	fl.oz. 6
Oil of mirbane.....	dr. 3
Oil of citronella.....	dr. 1

V.

Pumice, powder.....	av.oz. 2
Rotten stone, powder.....	av.oz. 2
Iron subcarbonate.....	av.oz. 4
Olive or cottonseed oil, or oleic acid.....	enough to form a paste
Oil of mirbane.....	enough to flavor

VI.

Oleic acid.....	fl.oz. 2
Lard.....	av.oz. 6
Jeweler's rouge.....	av.oz. 2
Emery, powder.....	av.oz. 1
Rotten stone, powder.....	av.oz. 4
Oil of mirbane, sufficient to give faint odor	

VII.

Rotten stone, fine powder.....	av.oz.	8
Oxalic acid.....	av.oz.	2
Cottonseed oil.....	fl.oz.	3
Oil of turpentine, enough to make a paste		

VIII.

Rotten stone, fine powder.....	av.oz.	12
Soft or green soap.....	av.oz.	6

IX.

Rouge (iron oxide).....	av.oz.	3
Lard or petrolatum.....	av.oz.	15

X.

Palm oil.....	av.oz.	8
Petrolatum.....	av.oz.	8
Rouge (iron oxide).....	av.oz.	4
Tripoli.....	av.oz.	3½
Oxalic acid.....	gr.	80

XI.

Japan, wax.....	av.oz.	2
Oleic acid, crude.....	av.oz.	11
Tripoli.....	av.oz.	7
Oil of mirbane.....	enough to flavor	

If desired, armenian bole, iron oxide, or venetian red may be added to this mixture to impart color.—D. modified.

Putz Tablets.

Soap, cut fine or powder.....	av.oz.	12
Precipitated chalk.....	av.oz.	1½
Jeweler's rouge.....	av.oz.	¾
Cream of tartar.....	av.oz.	1
Magnesium carbonate.....	av.oz.	¾
Water.....	sufficient	

This, like Putz pomade, is used for polishing purposes.

Quinine Salts, Extempore Preparation.

Quinine Carbolate.—Quinine alkaloid, 10 grains; carbolic acid, 5 grains.

Quinine Citrate.—Quinine alkaloid, 15 gr.; citric acid, 8 grains. This product is equivalent to 20 grains quinine citrate.

Quinine Hydrobromate.—Quinine sulphate, 100 grains; potassium bromide, 28 grains. This product is equivalent to 100 grains quinine bromide.

Quinine Hydriodate.—Quinine sulphate, 95 grains; potassium iodide, 40 grains. This product corresponds to 100 grains quinine iodide.

Quinine Iodo-hydriodate.—Quinine hydrochlorate, 70 grains; potassium iodide, 50 grains; iodine, 20 grains. These constituents are triturated together with a little alcohol.

This product corresponds to 100 grains quinine iodo-hydriodate.

Quinine Hypophosphite.—Quinine hydrochlorate, 100 grains; calcium hypophosphite, 24 grains. This product corresponds to 100 grains quinine hypophosphite.

Quinine Lactate.—Quinine alkaloid, 70 grains; lactic acid, 85 grains. If necessary, these are triturated together with a little alcohol. This product corresponds to 100 grains quinine lactate.

Quinine Phosphate.—Quinine sulphate, 94 grains; sodium phosphate, 80 grains. This product corresponds to 100 grains quinine phosphate.

Raticides.

I.

Wheat flour.....	av.oz.	5
Fresh milk.....	fl.oz.	10
Mutton tallow.....	av.oz.	1
Sodium chloride.....	gr.	50
Squill, coarse powder.....	av.oz.	4

Mix the wheat flour and milk, then add the tallow and salt, and heat for 20 minutes over a steam-bath; lastly, incorporate the squill.

—D.

This preparation is known as "Gliricin."

II.

Strychnine sulphate.....	av.oz.	1½
Milk sugar.....	av.oz.	1½
Prussian blue.....	gr.	20
Arsenic.....	av.oz.	3
Wheat flour.....	av.oz.	12

Rub up the strychnine and milk sugar together, add the prussian blue and arsenic, and finally, add the flour, and mix thoroughly. When required for use, moisten and make a dough; divide into small pellets and dry.

III.

Barium carbonate (freshly precipitated).....	av.oz.	2
Sugar.....	av.oz.	½
Bread.....	av.oz.	8
Form into 100 pills.		

IV.

Tartar emetic.....	av.oz.	1½
Squill, powder.....	av.oz.	1½
Barium carbonate, precipitated.....	av.oz.	8
Roasted meat.....	av.oz.	18

V. Poisoned wheat (arsenic)

Potassium arseniate.....	av.oz.	1
Water.....	fl.oz.	10
Fuchsin.....	gr.	5
Wheat.....	av.oz.	20

Dissolve the potassium salt in the water; add the fuchsin and dissolve, and then mix with the wheat. The latter may best be incorporated with the poison by introducing into a wide-mouth bottle, and gradually adding the poisonous solution, shaking frequently.—D.

The coloring matter may be omitted if desired.

VI. Poisoned wheat (strychnine):

Strychnine nitrate.....gr. 18
Water.....fl.oz. 10
Methyl violet.....gr. 5
Wheat.....av.oz. 20

Dissolve the alkaloidal salt in the water, add the methyl violet, introduce into a wide-mouth bottle, add the wheat; mix well by agitation, set aside for 6 hours, and then take out and dry at a temperature not exceeding 30 degs. C.—D.

Strychnine sulphate may be substituted for the nitrate, and the methyl violet may be omitted.

VII. See also under heading "Phosphorus Pastes."

Razor Pastes.

I.

Razor paste can be easily made by taking emery flour and shaking up with water and allowing to stand a moment to allow the coarse particles to subside; then pour off the remainder into a paper filter and allow to drain and dry. When dry mix with enough petrolatum or simple ointment to make a paste.

II.

Emery flour,
Jeweler's rouge,
Spermaceti ointment, of each, equal parts

III.

Emery flour.....av.oz. 2
Spermaceti ointment.....av.oz. 1

IV.

Jeweler's rouge,
Black lead,
Suet.....of each, equal parts

V.

Levigated oxide of tin.....av.oz. 4
Oxalic acid, powder.....av.oz. 1
Gum arabic, powder.....gr. 80
Water.....enough to form a paste

Roach Pastes.

Many of the roach pastes are "phosphorus pastes," or so-called "electric pastes." Others are made with red lead or other ingredients. These pastes may be distributed on papers in the haunting places of the roaches, or they may be fed into cracks or crevices in which the insects hide.

I.

Red lead.....av.oz. 4
Flour.....av.oz. 12
Molasses..sufficient to make a soft paste

II.

Red lead.....av.oz. 4
Corn meal, powder.....av.oz. 8
Molasses..sufficient to form a soft paste

III. See also "Phosphorus Pastes."

Roach Powders.

These powders should be distributed liberally in the localities frequented by the insects; a blower or "gun" is excellent for the purpose.

I.

Wheat flour.....av.oz. 4
Sugar, powder.....av.oz. 8
Borax, powder.....av.oz. 2
Unslaked lime.....av.oz. 2

Keep dry.

This should be strewn about on paper, taking care that no liquids are left uncovered.

II.

Borax.....av.oz. 12
Starch.....av.oz. 3
Cacao.....av.oz. 1½

All should be in fine powder and be well mixed.

III.

Plaster of paris.....av.oz. 4.
Oatmeal.....av.oz. 8
Sugar.....av.oz. 2

All should be in fine powder and should be well mixed.

IV.

Angelica root, powder.....av.oz. 15
Oil of eucalyptus.....fl.dr. 3
Mix well.

V.

Tartar emetic.....gr. 140
Insect powder.....av.oz. 16

VI.

Insect powder.....av.oz. 8
Levant wormseed, powder....av.oz. 8

VII.

Chamomile.....	av.oz. 2
Borax.....	av.oz. 12
Insect powder.....	av.oz. 2
Plaster of paris.....	av.oz. 1
Sulphur.....	av.oz. 8
Crude arsenic (so-called "co-balt").....	gr. 120

All should be in powder and should be well mixed.

VIII.

Insect powder.....	av.oz. 8½
Quillaja, powder.....	av.oz. 1½

IX.

Borax.....	av.oz. 18
Sugar.....	av.oz. 4
Cacao.....	gr. 300

Reduce all to powder and mix well.

X.

Borax.....	av.oz. 4
Paris green.....	av.oz. 4
Sugar.....	av.oz. 2

Reduce all to powder and mix well.

XI.

Wheat flour.....	av.oz. 8
Plaster of paris, calcined.....	av.oz. 8

—D.

XII.

Borax.....	av.oz. 8
Flour.....	av.oz. 8

—D.

XIII. A very common roach powder is a mixture of insect powder with borax. Thymol in alcoholic solution may also be added to insect powder.

Another mixture often used is a combination of insect powder and paris green.

Rust Stains, Removal of.

I.

Tartaric acid.....	av.oz. 1
Alum.....	av.oz. 1
Water, enough to make.....	fl.oz. 16

Mix, dissolve and filter.

II. A mixture of 2 parts of powdered cream of tartar with 1 part of powdered oxalic acid will remove stains from cotton and linen. This mixture is sometimes sold under the name of salts of lemon. The poisonous character of the acid must not be overlooked, for accidents have occurred from its careless use.

III. Rust Stains on White Goods.—Soak the stains in a solution of tin chloride, and rinse immediately with much water. The tin

salt is much more reliable in removing iron rust, and quicker in its action than oxalic acid, unless the stains are soaked in a solution of the latter, contained in a tin spoon, when the stains disappear in a short time.

Sealing Waxes.

These consist of resinous substances in combination with coloring agents, the mixture frequently being cheapened by the addition of mineral substances. In preparing these, the less fusible resins, such as rosin and shellac should be melted, then the turpentine. Venice turpentine or similar more fusible agent should be added, and with this mixture should be incorporated the remaining ingredients. The powdery substances should be added in the very finely divided form, and should first be added; if there are several powders, they should be well mixed before adding to the liquefied resins. When the ingredients have been mixed, the heating should be continued for a few moments to permit the escape of air bubbles which have been introduced during mixing of the ingredients.

The mixture may be cast into sticks, if desired, by pouring into suitable molds which have previously been moistened.

To cool off to the consistency required for molding, pour off about one-sixth of the mixture on a piece of wetted parchment paper, and as soon as this mass has hardened it should be returned to the vessel and stirred until the cooled portion is dissolved; the mixture may be poured into the molds.

Sealing Wax, Black.

I.

Shellac.....	av.oz. 12
Venice turpentine.....	av.oz. 8
Resin.....	av.oz. 1½
Lampblack.....	sufficient to color

II.

Gum turpentine.....	av.oz. 1½
Resin.....	av.oz. 6
Stearin.....	gr. 260
Lampblack.....	gr. 20
Heavy spar (barium sulphate). av.oz.	12

—D.

III.

Resin.....	av.oz. 10
Venice turpentine.....	av.oz. 1½
Chalk.....	av.oz. 2½
Lampblack.....	av.oz. 1

Melt the resin, add the venice turpentine and incorporate with the chalk and lampblack which have previously been well mixed.

Sealing Wax, Blue.

- I.
 Venice turpentine.....av.oz. 3
 White shellac.....av.oz. 7
 Resin.....av.oz. 1
 Prussian blue.....av.oz. 1
 Calcined magnesia.....gr. 90

- II.
 Gum turpentine.....av.oz. 4
 Resin, white.....av.oz. 15
 Ultramarine blue.....av.oz. 2
 Heavy spar (barium sulphate).....av.oz. 2½

—D.

- III.
 Gum turpentine.....av.oz. 4
 Resin, white.....av.oz. 15
 Ultramarine blue.....av.oz. 2
 Zinc oxide.....av.oz. 2
 Heavy spar (barium sulphate).....av.oz. 2½

—D.

Sealing Wax, Green.

- I.
 Shellac.....av.oz. 10
 Venice turpentine.....av.oz. 5
 Resin.....av.oz. 8
 Magnesia.....av.oz. ½
 King's yellow (yellow litharge).....av.oz. 1¼
 Mountain (Sander's) blue.....gr. 260
 Oil of turpentine.....fl.dr. 3

Melt the shellac and resin, add the venice turpentine, and then incorporate the colors, which have previously been mixed to a paste with the oil.

- II.
 Resin.....av.oz. 10
 Venice turpentine.....av.oz. 1½
 Chalk.....av.oz. 2½
 Chrome green.....av.oz. 1

Melt the resin, add the turpentine, and then incorporate the chalk and chrome green which have previously been well mixed.

- III.
 Shellac.....av.oz. 8
 Mastic.....av.oz. 4
 Green turpentine.....av.oz. 1½
 Verdigris.....av.oz. 2

IV. Paris green may also be employed as the coloring agent.

Sealing Wax, Red.

The coloring agents used may be vermilion or red lead, or even venetian red.

- I.
 Shellac, bleached.....av.oz. 8
 Venice turpentine.....av.oz. 5
 Chinese vermilion.....two papers

- II.
 Shellac.....av.oz. 10
 Venice turpentine.....av.oz. 2
 Vermilion.....av.oz. 4
 Bleached shellac should be used in making this wax.

- III.
 Resin.....av.oz. 12
 Yellow wax.....av.oz. 2
 Burgundy pitch.....av.oz. 2
 Melt together and color with red lead, venetian red, or vermilion.

- IV.
 Shellac.....av.oz. 8
 Venice turpentine.....av.oz. 8
 American vermilion.....av.oz. 2
 Balsam of peru.....av.oz. ½

- V.
 Venice turpentine.....av.oz. 8
 Shellac.....av.oz. 12
 Resin.....av.oz. 1½
 American vermilion.....av.oz. 8½
 Balsam of peru.....av.oz. ½

- VI.
 Venice turpentine.....av.oz. 4
 Shellac.....av.oz. 7
 Cinnabar.....av.oz. 4
 Magnesium carbonate.....gr. 90

Melt the shellac and turpentine, add the cinnabar, and finally, the magnesia in fine powder, triturated with a little oil of turpentine. Cheaper grades may be made by adding resin and reducing the quantity of cinnabar.

- VII.
 Orange shellac.....av.oz. 8
 Venice turpentine.....av.oz. 4
 Vermilion.....av.oz. 2

- VIII.
 Gum turpentine.....av.oz. 2
 Resin.....av.oz. 6
 Stearin.....av.oz. 1
 Vermilion.....av.oz. ¼
 Heavy spar (barium sulphate).....av.oz. 12

—D.

Sealing Wax, Violet.

- Gum turpentine.....av.oz. 2
 Resin, white.....av.oz. 7½
 Carmine.....av.oz. ½
 Zinc oxide.....av.oz. 2
 Ultramarine blue.....gr. 110
 Heavy spar (barium sulphate).....av.oz. 10

—D.

Sealing Wax, White.

I.		
Bleached shellac.....	av.oz.	7
Venice turpentine.....	av.oz.	3¼
Plaster of paris.....	av.oz.	2
Magnesia.....	gr.	120
Bismuth subnitrate.....	av.oz.	8
Lead Carbonate.....	av.oz.	4½

II.		
Gum turpentine.....	av.oz.	2
Resin, white.....	av.oz.	7½
Zinc white.....	av.oz.	2
Heavy spar (barium sulphate).....	av.oz.	8½

—D.

Sealing Wax, Yellow.

I.		
Shellac, bleached.....	av.oz.	8
Resin.....	av.oz.	2¼
Venice turpentine.....	av.oz.	4
King's yellow (sulphide of arsenic).....	av.oz.	1½

II.		
Shellac.....	av.oz.	7½
Venice turpentine.....	av.oz.	6½
Resin.....	av.oz.	3¼
Plaster of paris.....	av.oz.	1
Magnesia.....	gr.	90
Chrome yellow.....	av.oz.	1½

III.		
Gum turpentine.....	av.oz.	4
Resin, white.....	av.oz.	15
Chrome yellow.....	av.oz.	2
Heavy spar (barium sulphate).....	av.oz.	8

—D.

Sewing Machine Oil.

I.		
Paraffin oil, best.....	fl.oz.	4
Olive oil, best.....	fl.oz.	12 or 16

II.		
Paraffin oil.....	fl.oz.	14
Petrolatum.....	av.oz.	2

Melt the petrolatum, and add the oil; cool thoroughly, and allow the cloudiness which takes place to clear off by depositing. Decant, and use the clear supernatant oil.

Shoe Dressing, Kid.

I.		
Ceresin.....	av.oz.	4
Oil of turpentine.....	av.oz.	4
Castor oil.....	av.oz.	4
Linseed oil, raw.....	av.oz.	20
Pine tar.....	av.oz.	1

Dissolve the ceresin and tar in the oil of turpentine; then add the heavy oils while stirring. Perfume with oil of mirbane.

II.

Shellac.....	av.oz.	4
Aqua ammonia.....	fl.oz.	2
Water.....	fl.oz.	16
Black aniline.....		sufficient

Heat the ingredients slowly together (except the aniline) until the whole is near boiling and the shellac dissolves; (It may be necessary to add a little more ammonia during the boiling.) then add the aniline, and water enough to make the whole measure 16 fluidounces.

Shoe Dressing, Ladies' or Liquid.

These preparations are usually resinous solutions colored black, and intended for application to shoes by means of sponge. They dry quickly, and give a polish without friction with a brush.

Whenever bone or ivory black is directed in a formula, the purified article should be preferred, as it gives a dead-black color; whereas the unpurified may give but a brownish or grayish black.

Shoe blackings are mentioned under heading "Blacking for Shoes."

I.		
Caoutchouc.....	av.oz.	1
Petroleum.....	av.oz.	1
Carbon disulphide.....	fl.oz.	1
Shellac.....	av.oz.	4
Lampblack.....	av.oz.	2
Oil of lavender.....	fl.dr.	1
Alcohol.....	fl.oz.	20

Upon the caoutchouc, contained in a bottle, pour the carbon disulphide; cork well and let it stand a few days, or until the caoutchouc has become thoroughly gelatinized or partly dissolved; then add the petroleum, lavender oil and alcohol; next the shellac in fine powder, and heat it to about 50 degs. C., taking care that as little as possible is lost by evaporation. When the substances are all dissolved, and the liquid is tolerably clear, add the lampblack, and fill at once into small bottles.

II.

Extract of logwood.....	gr.	5
Gallic acid.....	gr.	10
Borax.....	gr.	10
Aniline black.....	gr.	20
Ammonia water.....	m.	20
Water, hot.....	fl.oz.	1
Aqueous shellac solution.....	gal.	1

Mix and dissolve,

The aqueous shellac solution should be prepared as follows:

Water	fl.oz. 5
Borax	gr. 100
Shellac, powder.....	gr. 800

The shellac should be gradually added to the hot borax solution.—H.

III.

Indigo.....	gr. 120
Tragacanth.....	gr. 240
Glue	av.oz. 4
Logwood	av.oz. 8
Glycerin	fl.oz. 8
Water	fl.oz. 16
Diluted acetic acid.....	fl.oz. 32

Boil together and strain.

IV.

Aniline black.....	gr. 400
Camphor	av.oz. 1½
Shellac.....	av.oz. 21
Wood alcohol.....	fl.oz. 64

The wood alcohol is used only because it is cheaper than grain alcohol; the latter may be employed if desired.

V.

Shellac.....	av.oz. 2
Ammonia water.....	fl.oz. 1
Water	fl.oz. 6
Aniline black.....	sufficient to color

Boil all the ingredients together, except the aniline, until the shellac is dissolved; then add the aniline, and sufficient water to make the liquid up to the measure of 16 fluid-ounces.

VI.

Ivory black, very fine	av.oz. 32
Molasses	av.oz. 24
Sperm oil.....	fl.oz. 4
Gum arabic	av.oz. 1
Diluted acetic acid.....	fl.oz. 8

Mix the first three ingredients, then add the gum dissolved in the acid; mix again, set aside for 24 hours, and add 8 or 4 pints of vinegar or sour beer.

VII.

Ivory black.....	av.oz. 8
Molasses	av.oz. 4
Sweet oil.....	av.oz. 1
Hydrochloric acid, commercial.....	av.oz. 4
Sulphuric acid, commercial.....	av.oz. 2
Water.....	sufficient

Mix the ivory black with the molasses and oil, add the hydrochloric and sulphuric acids, first mixing the latter with 3 or 4 fluid-ounces of water, and adding while hot. Let

stand until all effervescence ceases, stirring occasionally, and finally, thin to the desired consistence with stale beer.

VIII.

Castile soap, white.....	av.oz. 1
Sandarac	av.oz. 1
Mastic.....	av.oz. ½
Venice turpentine.....	av.oz. 2
Shellac.....	av.oz. 8¾
Aniline black, E.....	av.oz. 1½
Glycerin.....	fl.oz. 2
Water.....	fl.oz. 8
Alcohol.....	fl.oz. 24

Dissolve the soap in the water, mixed with 7 fluidounces of alcohol; macerate in a warm place, with frequent agitation, subsequently filtering through cotton. The mastic, sandarac and venice turpentine should be dissolved in 9 fluidounces of alcohol, and the solution also filtered through cotton. Then dissolve the shellac and aniline in the remainder of the alcohol. Now mix the three solutions and add the glycerin.

The mixture should be dispensed in wide-mouth bottles, the corks being supplied with a wire which has a sponge attached to it.

IX.

Bleached shellac.....	av.oz. 4
Borax	av.oz. 2
Sugar	av.oz. 4
Glycerin.....	av.oz. 2
Nigrosin.....	av.oz. 1
Water.....	sufficient

Mix the shellac, borax, and 14 fluidounces of water, with constant stirring, until the shellac is dissolved; then add the sugar, glycerin and nigrosin; stir until the latter is dissolved, and add enough water to make 36 fluidounces.—D.

X.

Molasses.....	av.oz. 4
Ivory black	av.oz. 4
Diluted acetic acid.....	fl.oz. 12
Water	fl.oz. 12
Acacia, powder.....	gr. 120
Sulphuric acid, commercial.....	fl.dr. 4

Mix all the ingredients, except the sulphuric acid; then add the latter gradually, with constant stirring.

XI.

Yellow wax.....	av.oz. 2
Fish oil.....	fl.oz. 2
Benzin.....	fl.oz. 15
Tincture of green soap.....	fl.oz. 1
Lampblack	sufficient to color

—D.

Shoe Grease.**I.**

Liquid petrolatum, yellow.....	f.oz. 14
Olive oil, common.....	f.oz. 1
Ceresin.....	av.oz. 5
Alkannin.....	gr. 10
Oil of mirbane.....	drops 6
Oil of citronella.....	drops 8

Melt the ceresin, add the petrolatum, oil and alkannin; allow to cool, and incorporate the oils of mirbane and citronella.

II.

Yellow wax.....	av.oz. 1
Turpentine.....	av.oz. 1
Castor oil.....	av.oz. 1
Linseed oil.....	f.oz. 10
Pine tar.....	gr. 120

Clean the leather; let dry, and rub the grease well in before a fire.

III.

Resin.....	av.oz. 2
Yellow wax.....	av.oz. 3
Linseed oil.....	f.oz. 12
Neatsfoot oil.....	f.oz. 8
Oil of turpentine.....	f.oz. 4

This has been known as Norfolk fluid.

Shoe Polish, Patent Leather.**I.**

Yellow wax, or ceresin.....	av.oz. 3
Spermaceti.....	av.oz. 1
Oil of turpentine.....	f.oz. 11
Asphalt varnish.....	av.oz. 1
Borax, powder.....	gr. 80
Frankfort black.....	av.oz. 1
Prussian blue.....	gr. 150
Oil of mirbane.....	f.dr. 1½

Melt the wax, add the borax, and stir until a kind of jelly has been formed. In another pan melt the spermaceti; add the varnish, previously mixed with the turpentine; stir well and add to the wax; lastly, add the colors, mix well, and incorporate the oil of mirbane.

II.

Molasses.....	av.oz. 4
Gum arabic.....	av.oz. ½
Ivory black.....	av.oz. 16

Mix well, and simmer together for half an hour.

Shoe Varnish, Patent Leather.**I.**

Shellac.....	av.oz. 2
Gum turpentine.....	av.oz. ¼
Sandarac.....	gr. 144
Lampblack.....	gr. 72
Oil of turpentine.....	f.dr. 6
Alcohol.....	f.oz. 19

II.

India rubber.....	av.oz. ¼
Shellac.....	av.oz. 8
Camphor.....	av.oz. 1
Nigrosin.....	av.oz. 1
Carbon disulphide.....	f.oz. 2
Wood alcohol.....	f.oz. 22

Dissolve the rubber in the carbon disulphide, and add the other ingredients, previously dissolved in the alcohol.

Shoe Dressing, Tan or Russet.**I.**

Oil of turpentine.....	f.oz. 10
Yellow wax.....	av.oz. 5
Soap (ordinary bar).....	av.oz. ¼
Boiling water.....	f.oz. 10

Dissolve the wax in the turpentine by the aid of the water bath, and the soap in the hot water; mix in a hot mortar, and agitate until cold.

II.

Palm oil.....	av.oz. 2
Common soap.....	av.oz. 6
Oleic acid.....	f.oz. 4
Glycerin.....	f.oz. 1
Tannic acid.....	gr. 60

Melt the soap and palm oil together with a very gentle heat. When the soap is dissolved add the oleic acid. Dissolve the tannic in the glycerin; add to the hot mixture, and stir until cold.

III.

Petrolatum.....	av.oz. 12
Yellow wax.....	av.oz. 4

IV.

Yellow wax.....	av.oz. 2
Fish oil.....	av.oz. 2
Benzin.....	f.oz. 15
Tincture of green soap.....	f.oz. 1
Yellow ochre.....	av.oz. ½

—D.

V.

Yellow wax.....	av.oz. ¼
Oil of turpentine.....	f.oz. 2
Soap shavings.....	gr. 280
Fish oil.....	f.oz. 8
Borax, fine powder.....	gr. 275
Glycerin.....	f.oz. 9
Yellow ochre.....	av.oz. 3

Melt the wax, and add the oil of turpentine. With the fish oil incorporate the borax previously dissolved in the glycerin, add the yellow ochre, and then the wax solution; now add the soap shavings; heat the whole on a water bath until dissolved, and stir until cold.

VI.

Soft or green soap	av.oz. 2
Linseed oil, raw	fl.oz. 8
Annatto solution (in oil)	fl.oz. 8
Yellow wax	av.oz. 8
Gum turpentine	av.oz. 8
Water	fl.oz. 8

Dissolve the soap in the water and add the annatto; melt the wax in the oil and turpentine, and gradually stir in the soap solution, stirring until cold.

VII.

Yellow wax	av.oz. 5
Potassium carbonate	gr. 264
Resin soap (common yellow bar)	gr. 175
Water	fl.oz. 10
Oil of turpentine	fl.oz. 5

Mix the first four ingredients, heat until well mixed, and when cooled to 80 degs. C. the oil may be added; now incorporate enough of an oil-soluble yellow aniline to produce the desired shade.

Show Globe Colors.

Colored liquids for show globes, show globe colors as they are termed, are frequently made of coal tar dyes, and very handsome colors may be produced in this way, but these, as a rule, lack permanency. However, these colors are inexpensive; so very little of the dye being required that they may be "freshened" occasionally, or they may be entirely renewed. Those who do not care to use coal tar dyes may employ the formulas mentioned below. It should be understood, however, that no show bottle colors are absolutely permanent, because they are exposed to one of the most powerful of all chemical agents, viz., light. From time to time they should be filtered or else renewed, and the bottle should be thoroughly cleansed.

Show bottle colors are liable to be subjected to considerable cold in winter time and to be frozen. This may be prevented by replacing 20 or 25 per cent of the water with alcohol or glycerin. Such replacement cannot always be made, owing to possible chemical change—for example, in purple made with potassium permanganate.

The colors most commonly employed are red, green, blue, and yellow. The formulas given below will yield these colors in several different shades. These shades may in each

instance be deepened or made lighter by decreasing or increasing the amount of water.

Show Globe Color, Amber.

Dragon's blood	gr. 45
Sulphuric acid	fl.dr. 3
Distilled water	gal. 2

Powder the dragon's blood and macerate in the acid for 20 or 30 minutes, then add the distilled water and filter.

Show Globe Colors, Blue.

Copper sulphate	av.oz. 16
Sulphuric acid	fl.oz. 1
Water	gal. 2

II.

Copper sulphate	gr. 240
Ammonia water sufficient, or fl.oz. 1 to 2	
Water	gal. 2

Dissolve the copper salt in water, add ammonia water until the precipitate first formed is redissolved, and add the remainder of the water.

III. Dissolve prussian blue in water by the aid of oxalic acid, or dissolve soluble blue or indigo sulphate in water.

IV.

Copper sulphate	av.oz. 8
Alum	av.oz. 8
Sulphuric acid	fl.oz. 8
Distilled water	gal. 2

Dissolve the alum and blue vitriol in the water, cautiously add the sulphuric acid, and filter.

Show Globe Colors, Crimson.

I.

Solution of iron chloride	fl.dr. 10
Water of ammonia	fl.oz. 1
Acetic acid	fl.oz. 2
Alcohol	fl.oz. 6
Distilled water	gal. 2

Add the solution of iron chloride to the water; then add the alcohol, acetic acid and water of ammonia, and filter.

II.

Iodine	av.oz. $\frac{1}{2}$
Potassium iodide	fl.oz. $\frac{1}{2}$
Hydrochloric acid	fl.oz. 9
Distilled water	gal. 2

Dissolve the iodine and potassium iodide in the water and add the hydrochloric acid; filter.

Show Globe Colors, Green.

I.
Copper sulphate.....av.oz. 12
Hydrochloric acid.....fl.oz. 10
Distilled water.....gal. 2
Dissolve the copper sulphate in the distilled water, add the hydrochloric acid and filter.

II.
Verdigris.....av.oz. 12
Sulphuric acid.....sufficient
Distilled water.....gal. 1
Mix the verdigris with enough acid to dissolve; let stand a few minutes, add to the distilled water and filter.

III.
Nickel.....av.oz. 5
Hydrochloric acid.....fl.oz. 8
Nitrous acid.....fl.oz. 8
Distilled water, enough to make.....gal. 2
Dissolve the nickel in the hydrochloric acid, add the water, then the nitrous acid.

IV.
Copper sulphate.....av.oz. 9
Ammonium chloride.....av.oz. 9
Water, enough to make.....gal. 2
First dissolve the copper salt in the water, then add the ammonium chloride; dissolve and filter.

V.
Copper acetate.....av.oz. 1
Acetic acid.....fl.oz. 9
Water, enough to make.....gal. 2
Add the acetic acid to the copper acetate, and triturate with the water till dissolved.

VI. Add an aqueous solution of picric acid to an aqueous solution of copper sulphate until the desired shade is produced. A beautiful grass green liquid will be the result.

VII.
Nickel.....av.oz. $\frac{1}{2}$
Nitric acid.....fl.oz. 2
Distilled water.....gal. 2
Potassium bichromate.....sufficient
Dissolve the nickel in the nitric acid, add the water and enough of solution of potassium bichromate to give the desired color, and filter.

VIII.
Copper sulphate.....av.oz. 1
Water of ammonia.....fl.oz. 10
Potassium bichromate.....sufficient
Distilled water.....960
Dissolve the copper sulphate in the dis-

tilled water, add the water of ammonia and enough of a solution of potassium bichromate to give the desired color, and filter.

IX.
Fluorescein.....gr. 2
Ammonia water.....fl.dr. 2
Water, distilled.....gal. 2
This makes a fluorescent grass green liquid.

X.
Copper sulphate.....av.oz. 9
Hydrochloric acid.....fl.oz. 4
Subcarbonate of iron.....av.oz. 1
Distilled water.....gal. 2
Dissolve the copper sulphate in the water; dissolve the iron in the hydrochloric acid; mix the two solutions, and filter.

XI.
Copper sulphate.....av.oz. 8
Sodium chloride.....av.oz. 16
Hydrochloric acid.....fl.oz. 8
Water.....gal. 2
Mix, dissolve and filter.

XII.
Potassium bichromate.....gr. 120
Copper ammonio-sulphate.....gr. 240
Water.....gal. 2
Mix, dissolve and filter.
Instead of the copper salt may be used a solution of copper treated with ammonia water until the precipitate first formed is redissolved.

Show Globe Colors, Orange.

I. Dissolve annatto in liquor potassa and dilute alcohol, and filter.

II. Dissolve 8 av. ounces of potassium bichromate in 2 gallons of water. The shade may be varied by adding nitric, sulphuric, or hydrochloric acid, and filter. Instead of using any of these acids, 120 grains of chromic acid may be dissolved in the water.

III. Some of the darker of the yellow show globe colors may also be employed if an orange shade is desired.

Show Globe Colors, Pink.

I.
Sodium salicylate.....gr. 16
Tincture of iron chloride,
Hydrochloric acid...of each, sufficient
Water.....gal. 2

Dissolve the sodium salicylate in the water and add (cautiously) tincture of iron in single drops until the proper tint has been realized.

Hydrochloric acid may be used carefully (in drops) to render the tint paler. Should too much acid have been added, restore the tint by the addition of ammonia.

II.

Cobalt oxide.....	gr. 120
Nitric acid.....	fl.oz. 12
Water	gal. 2

Dissolve the cobalt oxide in the acid, then add the water.

III.

Cobalt oxide	av.oz. 2
Nitric acid.....	fl.oz. 1
Hydrochloric acid	fl.oz. 1
Ammonia water.....	fl.oz. 18
Sulphuric acid.....	fl.oz. 1
Water	gal. 2

Dissolve the cobalt oxide in the nitric and hydrochloric acids mixed, then add the remaining ingredients previously mixed; set aside for several weeks, and filter.

Show Globe Colors, Purple.

I.

Verdigris.....	gr. 60
Water of ammonia.....	fl.oz. 20
Distilled water.....	gal. 2

Mix the water and the ammonia, add the verdigris, and, when dissolved, filter.

II.

Salicylic acid.....	gr. 5
Alcohol.....	fl.oz. 1
Tincture of iron chloride.....	fl.dr. 1
Distilled water.....	gal. 2

Dissolve the salicylic acid in the alcohol, add the tincture of iron, then add distilled water.

III.

Lead acetate.....	av.oz. 1
Cochineal, powder.....	gr. 20
Distilled water.....	gal. 1

Macerate for several days; filter, and dilute to the desired shade.

IV.

Potassium permanganate.....	gr. 40
Distilled water.....	gal. 2

Mix and dissolve.

Show Globe Colors, Purple (Brilliant.)

Copper sulphate.....	gr. 120
French gelatin.....	gr. 60
Liquor potassa.....	fl.oz. 32
Water	sufficient

Dissolve the copper salt in 2 fluidounces of water, and the gelatin in the same amount

of boiling water; mix the two solutions, add the liquor potassa, shake the mixture, let stand 10 hours, decant the clear liquid, and dilute as desired with water.

Show Globe Colors, Red.

I. Dissolve carmine in water of ammonia or liquor potassa, and reduce with water to the desired tint.

II. Take water in which red cabbage has been boiled; add sulphuric acid to bring out the color, dilute with water to the desired tint, and filter.

III.

Cochineal	gr. 100
Potassium bitartrate.....	gr. 75
Sulphuric acid.....	fl.dr. 6
Distilled water.....	gal. 2

Boil the cochineal and potassium bitartrate in water until exhausted; allow to cool, add the sulphuric acid and filter.

Instead of this, the solution of cochineal (cochineal coloring) of the National Formulary may be used.

IV.

Cobalt carbonate.....	gr. 60
Hydrochloric acid,	
Ammonium carbonate, of each, sufficient	
Distilled water, enough to make.....	gal. 2

Dissolve the cobalt salt in the acid and some water, add enough ammonium carbonate so that the precipitate first formed is redissolved; filter, and dilute as desired.

V. Add to the amount of water necessary to fill the show bottle, compound tincture of iodine (drop by drop) until the desired tint is obtained; then add a few scales of metallic iodine. The iodine is added in excess to prevent bleaching, which would occur very soon were it omitted.

VI.

Tincture of iron chloride.....	fl.oz. 2
Potassium or ammonium sulphocyanide	gr. 40
Water	gal. 2

Dissolve the sulphocyanide in water, add the tincture, and filter.

VII.

Solution of iron chloride.....	fl.oz. 1
Aqua ammonia.....	fl.oz. 2
Acetic acid.....	fl.oz. 2
Alcohol.....	fl.oz. 8
Water	gal. 5

The water should first be clarified with alum (6 grains to the gallon) and filtered; the other ingredients mixed, and the water added, and the whole again filtered.

VIII.

Alum.....	gr. 100
Potassium iodide.....	av.oz. $2\frac{1}{2}$
Distilled water.....	gal. 2

Dissolve the alum and potassium iodide in the distilled water, and filter.

IX.

Cudbear.....	av.oz. 1
Nitric acid.....	fl.oz. 8
Water.....	gal. 2

Mix; allow to stand for 24 hours, and filter.

Show Globe Color, Violet.

I.

Cudbear.....	av.oz. 2
Ammonia water.....	fl.oz. 8
Water.....	gal. 2

Mix; macerate for 24 hours, and filter.

II.

Cobalt nitrate.....	av.oz. 4
Ammonium carbonate.....	gal. 2
Copper ammonio-sulphate.....	..... of each, sufficient
Water.....	gal. 2

Dissolve the cobalt nitrate in the water saturated with ammonium carbonate, and add of the copper ammonio-sulphate sufficient to produce the desired tint.

Instead of the copper salt may be used a solution of copper sulphate to which is added ammonia water until the precipitate first formed is redissolved.

Show Globe Colors, Yellow.

I.

Potassium bichromate.....	av.oz. 10
Nitric acid.....	fl.oz. 20
Distilled water.....	gal. 2

Dissolve the potassium bichromate in the water, and add the nitric acid; filter.

II.

Potassium bichromate.....	av.oz. 6
Sodium carbonate or bicarbonate.....	av.oz. 4
Distilled water.....	gal. 2

Dissolve the potassium bichromate in the water, add the sodium salt (dissolved); filter.

III. Add tincture of curcuma to alcohol till the required color is obtained.

IV.

Picric acid.....	av.oz. $\frac{1}{2}$
Water.....	gal. 2

Dissolve and filter.

V.

Potassium chromate.....	av.oz. 8
Water.....	gal. 2

Dissolve and filter.

VI.

New York chrome yellow.....	av.oz. 1
Hydrochloric acid.....	fl.oz. 1
Nitric acid.....	fl.oz. 2
Water.....	gal. 2

Mix; dissolve and filter.

Silver Plating.

See "Plating with Gold, Silver," etc.

Silver, Polishing.

See "Polishing Powders."

The following may also be employed:

Sodium thiosulphate (hyposulphite).....	av.oz. 4
Water.....	fl.oz. 12

Mix; dissolve and filter.

In using, apply this liquid to the oxidized silver, rub dry, and polish with one of the polishing powders adapted to silver.—D.

The following is commonly employed:

Prepared chalk or whiting.....	av.oz. 2
Ammonia water.....	fl.oz. 2
Water, enough to make.....	fl.oz. 8

Soap, Ox-Gall.

I.

Extract of quillaja.....	av.oz. 1
Borax, powder.....	av.oz. 1
Ox-gall, fresh.....	fl.oz. 4
Common or castile soap, powder.....	av.oz. 15

Triturate together the borax, extract and ox-gall, dissolving as much of the borax as possible. Then add the soap, beat the whole to a uniform consistence, and cut into cakes of the desired size.

If no extract of quillaja be at hand, soap bark (in shreds) may be exhausted by boiling with water, straining, and evaporating the liquid on a water bath. One hundred parts of bark yield about 20 of extract.—D.

II.

Oleic acid.....	1 part
Borax.....	2 parts
Ox-gall, fresh.....	5 parts
Tallow or common soap.....	20 parts

Triturate the borax with the ox-gall; then thoroughly incorporate with it the soap, previously reduced to powder, and lastly incorporate the oleic acid.

III.

Ox-gall, fresh.....	fl.oz.	10
Stearin soap.....	av.oz.	9
Borax, powder.....	av.oz.	1
Alcohol.....	sufficient	

Mix the first three ingredients at a slightly elevated temperature, then add sufficient alcohol (from 1 to 2 fluidounces) to form a suitable mass; transfer the whole to a flat-bottomed vessel, and when cold cut into pieces.—D.

Soap, Shaving.

Mutton suet.....	av.oz.	10
Cocoonut oil.....	av.oz.	5
Caustic soda.....	av.oz.	2
Caustic potassa.....	gr.	170
Water.....	fl.oz.	7½
Oil of caraway.....	drops	25
Oil of bergamot.....	drops	30
Oil of lavender.....	drops	20
Oil of thyme, white.....	drops	12
Oil of mirbane.....	drop	1

Melt the tallow and cocoonut oil; allow to cool to 50 degs. C., then add the caustic potassa and soda dissolved in the water, and warm the whole gently during one-half hour or so, stirring occasionally, until a uniform soapy mass is produced; to the latter add the volatile oils.—D.

Soap, Shaving, Antiseptic.

To the previous soapy mixture, add ¾ av. ounce of salol, first warming the soap to about 50 or 60 degs. C., and stir until the salol is dissolved.—D.

Soap, Soft. (Green Soap.)

For pharmaceutical use:

Olive oil.....	fl.oz.	25
Caustic potassa.....	av.oz.	9½
Water.....	fl.oz.	75

Dissolve 8 av.ounces of caustic potash in 50 fluidounces of water, and add 12½ fluidounces of this solution to the oil. Heat the mixture over a moderate fire, stirring until sufficiently thickened. Gradually add the remaining solution of potassa, and continue the heat, stirring occasionally until the mixture assumes a transparent, gelatinous form; dissolve the remaining 1½ av.ounces of potassa in 25 fluidounces of water; add this solution to the soap mixture, and evaporate the whole to proper consistency.

Soap, Stearin.

Stearic acid.....	av.oz.	2¼
Sodium carbonate, crystal.....	gr.	560
Water.....	fl.oz.	8
Alcohol.....	fl.dr.	2
Sodium chloride.....	fl.dr.	4

Dissolve 540 grains of the crystallized sodium carbonate in 6 fluidounces of water; transfer this solution to a water bath and gradually add the stearic acid with constant agitation; then add the alcohol; cover the vessel, and allow it to remain upon the bath for 6 hours to separate the soap; add the sodium chloride and the remainder of the sodium carbonate, dissolved in the remainder of the water; transfer the whole to a strainer, and when cold press out the remainder of the moisture.

Soap, Whale Oil.

This may be prepared like soft soap, substituting whale oil for the olive oil.

Stains from Fabrics, Removing.

See also the following headings: "Ox-gall Soap," "Cleansing Creams," "Cleansing Liquids," "Benzin Jelly," "Glove Cleaner," "Rust Stains, Removal of," and "Silver Nitrate Stains."

Cleansing Pencils.

Form little rolls from ox-gall soap, half an inch thick and 2½ inches long, and cover with tinfoil. Instead of ox-gall soap, the following may be employed:

Borax, powder.....	av.oz.	2
Common or castile soap.....	av.oz.	14
Green soap.....	av.oz.	4

Mix to a uniform mass, using a gentle heat if necessary.

Cleansing Liquid.

I.

Spirit of ammonia.....	fl.dr.	12
Oil of turpentine.....	fl.dr.	10
Ether.....	fl.dr.	12
Oil of lavender flowers.....	fl.dr.	1
Alcohol.....	fl.oz.	27

II.

Spirit of ammonia.....	fl.dr.	6
Ether.....	fl.dr.	14
Benzin.....	fl.oz.	5
Oil of lavender flowers.....	fl.dr.	1
Tincture of quillaja.....	fl.oz.	7
Alcohol.....	fl.oz.	15

III.

Oil of turpentine	fl.oz.	3
Benzin	fl.oz.	3
Ammonia water	fl.oz.	8
Alcohol	fl.oz.	28

IV.

Benzin	fl.oz.	32
Oil of turpentine	drops	8
Oil of mirbane	drops	8

The last, sometimes called "Brunnersches fleckwasser," (by which term benzin only is also signified) is particularly suited for cleansing gloves.

Before applying any of the cleansers recommended to colored goods an experiment should be made, either with a sample of the goods or on some portion which will not be seen, to determine whether directions given for treating the spot will not affect the color.

The Spot is of Unknown Origin.

White Goods.—Dissolve some soap in lukewarm water and add two dessertspoonfuls of cleansing liquid (as above) and dampen the spot with a sponge soaked in this solution; finally wash out in clear water.

Colored Woolens.—Dissolve a cleansing pencil (as above) in a bottle of the solution and wash out the spot in the liquid; then rinse in clear water, and dry in the air.

Silk, Satin and Similar Delicate Fabrics.—Add to the above solution the yolks of two eggs, and spread this on the spot. Then wash in lukewarm water; rinse in cold water, and dry by a gentle heat. To press out use an iron that is warm only—not hot.

The Spot is of Dust.

White Goods.—Beat and brush.

Colored Wool, Silk, Satin, etc.—Old spots that are dried in should be painted first with yolk of egg, then with cleansing solution and allowed to dry. Scratch this off and wipe with a wet linen rag.

Milk, Soup, or Small Grease Spots Generally.

White Goods.—Wash with the warm solution of a "cleansing pencil" in water.

Colored Cotton or Woolen Goods.—Dampen with cleansing solution; remove the excess of the solution by means of blotting paper, and wash with a solution of a "cleansing pencil."

Silk, Satin, etc.—Dampen by means of a

sponge soaked in cleansing liquid I., removing any excess by means of blotting paper.

Butter, Grease, Oil, Paints, Varnish, etc.

White or Colored Woolens or Cotton Goods.

—Moisten several times with cleansing liquid I., lay a piece of blotting paper over the spot and press this with a hot iron. Then wash the whole of the fabric in hot soap suds.

Silk, Satin and Delicate Fabrics.—Rub up some "white bole" or talcum; thin dough with cleansing solution II., and spread over the spot. When thoroughly dry brush off and wipe with dry bread crumbs.

When the Spots are Old.—First moisten with chloroform and then proceed as above.

The Spot is from Stearin, Wax, etc.

First remove as much as possible with a knife; then lay a damp towel under the spot and put several thicknesses of blotting paper over it and press out with a hot iron. If any stain remains after this, treat as directed under butter, grease, etc.

Resin, Tar, Axle Grease, etc.

White Goods.—Wet with good oil of turpentine, wring out, cover with blotting paper, and go over with a hot iron. Then wash in warm soap suds.

Colored Cotton or Woolen Goods.—Moisten the spot, apply butter, soap thoroughly, allow to stand for a few minutes, and then wash with oil of turpentine and hot water, alternately. If this does not help, spread over the spot the yolk of an egg previously mixed with oil of turpentine; cover with blotting paper and press with a hot iron. Then scratch off the residue and wash thoroughly. As a final resort, wash out in water slightly acidulated with hydrochloric acid.

Silk, Satin, etc.—Drench with chloroform, and, when this has evaporated, apply "white bole or talcum;" cover with blotting paper, and press with hot iron. If this does not help, mix some yolk of egg with chloroform and proceed as above, removing the residue by wiping off with bread crumbs.

Vinegar, Acid, Wines, Fruit, etc.

White Goods.—Wash out with clear water to which a little "cleansing liquid" II. has been added.

Colored Goods, Whether of Cotton, Wool

or Silk.—Moisten with cleansing liquid, allow to evaporate, and then rinse in clear water.

Acids.

Fresh spots may be removed by putting on a drop of cleansing liquid; old spots cannot be remedied.

Colored Fruit Stains from Peaches, Red Wine, Cherries, Strawberries, etc.

White Goods.—Dip in javelle water or solution of chlorinated soda, and immediately that the stain has disappeared wash thoroughly in clear water.

Colored Cotton or Woolen Goods.—Wash with hot soap suds, to which a smaller or larger quantity of javelle water, or solution of chlorinated soda, has been added (as the fabric is more or less delicate); rinse in water to which a little cleansing liquid has been added; finally, wash in a large quantity of clear water.

Silk, Satin, etc.—Follow directions as above, save to use very dilute solutions.

Grass Stains.

White Goods.—Wash out with boiling water.

Colored Goods, Whether of Cotton, Wool or Silk.—Moisten the spot with a very dilute solution of tin chloride, and then wash thoroughly in a plentiful supply of clear water.

Stains from Tannin, Green Nuts, etc.

Treat with very dilute javelle water, or solution of chlorinated soda.

Coffee or Chocolate Stains.

Cover the spot with yolk of egg diluted with cleansing liquid; wash out in warm water, and iron (while still moist) on the wrong side of the cloth.

Aniline Ink Stains.

White Goods.—Wash with alcohol to which a little acetic acid has been added, and then bleach with javelle water or solution of chlorinated soda.

Colored Goods, Whether Cotton, Wool or Silk.—If the color admits of it, follow the directions for white goods. If the dye is too delicate for this wash out with strong alcohol alone, as nothing else will prove of benefit. See also "Ink Erasures."

Stains for Wood.

By wood stains are understood solutions of dyes, etc., used for coloring wood. They are fixed on the wood either direct or through the medium of some mordant. In many cases the color is developed in the grain only after the mordant is applied, sometimes the mordant merely changes the tone of the color.

The action of the stain is influenced not only by the mordant, but also by the natural constituents of the wood—tannin, for example. Consequently different woods sometimes give different results with the same stain.

Before applying a stain, the wood should be smoothed by sandpapering. After applying the stain, the wood should be polished so as to "bring out" the grain.

Stain, Black or Ebony.

Solution I.

Sodium chlorate.....	av.oz.	1
Copper chloride.....	av.oz.	1
Water.....	fl.oz.	15

Solution II.

Aniline hydrochlorate.....	av.oz.	2½
Water.....	fl.oz.	15

The dry wood is painted three times with the above solutions, applying them alternately; before each application the wood is well dried; finally, it is rubbed with linseed oil or a mixture of turpentine and wax, and polished. The color is not affected by acids or alkalis.

Stain, Cherry.

I.

Annatto.....	av.oz.	4
Caustic potassa.....	av.oz.	1
Water.....	fl.oz.	48

Boil until the annatto is dissolved.

II.

Logwood chips.....	av.oz.	4
Caustic potassa.....	av.oz.	½
Water.....	fl.oz.	16

Boil until the color is extracted, adding more water from time to time, to make up for the loss by evaporation.

The stain is to be "fixed" by washing the wood, after its application, with alum water.

Stain, Mahogany.

I.

Madder.....	av.oz.	2
Logwood chips.....	av.oz.	½
Water.....	fl.oz.	32

Mix; boil and stain. Apply to wood while hot and mordant with an aqueous solution of potassium carbonate, 60 grains to the pint.

II.

Alkanet	av.oz.	½
Aloes	av.oz.	1
Dragon's blood	av.oz.	1
Alcohol	fl.oz.	16

Reduce the drugs to coarse powder; mix with the alcohol, set the whole in a warm place for 8 or 4 days, agitating occasionally, and filter. Before applying, mordant with dilute nitric acid.

Stain, Walnut.

Potassium permanganate	av.oz.	½
Distilled water	fl.oz.	16

Apply twice in succession, and after an interval of five minutes wash with clear water.

A strong hot decoction of green walnut shells may also be applied, followed, when partially dry, with a concentrated solution of potassium bichromate.

Stamping Powders.

These are employed for stamping embroideries, etc. Powders of various colors are rendered adhesive by admixture with gum resins, such as resin, copal, damar or sandarac. The substances should be made into the most impalpable power by trituration and sifting.

The method employed for stamping is to perforate paper according to the pattern desired, then placing this upon the fabric, sprinkling or rubbing the powder into the perforations (carefully removing the pattern), placing a piece of unperforated paper on the cloth, and carefully passing a hot iron over the whole. The iron melts the resin and leaves the design imprinted on the material.

I. Mix equal parts powdered resin and a pigment—ultramarine or prussian blue for blue; zinc oxide or flake white for white; chrome yellow for yellow; burnt or raw umber, burnt or raw sienna, vandyke brown, etc., for brown; ivory black for black, etc.

II.

Resin,	
Damar resin,	
Copal resin,	
Sandarac,	
Pigment	of each, equal parts

Reduce each to very fine powder, and mix well.

Storm Glass or Baroscope Solution.
(Chemical Barometer.)

I.

Potassium nitrate	gr.	36
Ammonium chloride	gr.	36
Camphor	gr.	180
Absolute alcohol	fl.dr.	6
Alcohol	fl.dr.	6

II.

Camphor	gr.	120
Potassium nitrate	gr.	90
Ammonium chloride	gr.	60
Diluted alcohol	fl.oz.	2½

Mix and dissolve, and place in a glass tube about 12 inches long and ¼ inch in diameter; the tube to be filled about three-fourths and tied over with a bladder.

III.

Potassium nitrate	gr.	90
Ammonium chloride	gr.	90
Camphor	gr.	120
Alcohol	fl.oz.	2

Put the mixture into a bottle 18 inches in length and ¼ inch in diameter, and cover the mouth with a piece of perforated plaster. If the weather promises to be fine the insoluble matter will settle at the bottom of the tube, while the liquid remains pellucid; but previous to a change for rain, the compound will gradually rise, the fluid remaining transparent. Twenty-four hours before a storm or very high wind the substance will be partly on the surface of the liquid, apparently in the form of a leaf; the fluid in such cases will be very turbid and in a state resembling fermentation.

IV. This mixture is also used:

Ammonium chloride	gr.	60
Camphor	gr.	60
Potassium nitrate	gr.	60
Alcohol	fl.oz.	2½
Distilled water, hot	fl.oz.	4

—D.

Stove Polish or Blacking.

I.

Soap	av.oz.	4
Boiling water	fl.oz.	16
Black lead	sufficient	

Dissolve the soap in the water, and add enough of the black lead to form a paste.

II.

Plumbago	av.oz.	16
Water	fl.oz.	4
Gum turpentine	av.oz.	4
Sugar	av.oz.	1

Knead thoroughly and keep in tin boxes. Apply with a brush.

III. Plumbago made into a thin paste with sodium silicate or water glass. This makes an excellent stove polish and should be brushed thoroughly.

IV. Reduce graphite to an impalpable powder by grinding in a mill with water; dry; use with water first, then dry and polish. This is the base of nearly all commercial stove polishes.

V.
 Bone blackav.oz. 2
 Pulverized graphiteav.oz. 2
 Copperas.....av.oz. 4
 Water.. sufficient to form a creamy paste

Tableau Lights.

See "Colored Fires."

Tar Stains, Removal of.

See "Stains from Fabrics, Removal of."

Test Papers.

In preparing test papers, only the best white filter paper or letter paper should be employed. In order to remove traces of acid, which are so often present in paper, it should be macerated for 24 hours in about a 1 per cent ammonia water; then dry by suspending on lines in a room of ordinary temperature.

In making the test paper, the prepared paper above should either be drawn through the impregnating liquid, expressing the excess by means of a glass rod, or else the mixture should be applied to one side of the paper by means of a broad, soft brush. After impregnating the paper, the latter should be dried by suspending on lines.—D.

I. Azolitmin paper:

Azolitmingr. 15
 Sodium carbonate, pure.....gr. 8
 Distilled water.....fl.oz. 32
 Phosphoric acid.....sufficient

Dissolve the azolitmin and sodium carbonate in the water, and neutralize the solution with the acid. Pass filter paper through the solution and dry, as directed above.

This paper becomes red with acids; it will indicate 1 part of sulphuric acid in 40,000, and 1 of hydrochloric acid in 50,000.

II. Brazil wood paper:

Brazil wood, raspedav.oz. 2½
 Distilled water.....fl.oz. 32

Mix; macerate for 24 hours, agitating frequently; filter, and to the filtrate add enough

ammonia water, drop by drop, until it begins to acquire a blue-red color. Prepare the paper as in the preceding.

This paper will indicate 1 part of ammonia in 80,000.

III. Congo red paper:

Congo red (coal tar dye).....gr. 15
 Alcoholfl.oz. 28
 Distilled water.....fl.oz. 8

Dissolve the dye in a mixture of the alcohol and water, and prepare the test paper as in the preceding instance.

This paper will indicate 1 part of sulphuric acid in 2,500, and 1 part of hydrochloric acid in 3,000.

A blue congo paper may be produced by adding alkali to the above solution.

IV. Curcuma paper:

Curcuma root, powder.....gr. 5
 Distilled water.....fl.oz. 16
 Alcoholsufficient

Macerate the drug with 4 fluidounces of alcohol for several days, agitating frequently, and filter, adding enough alcohol through the filtrate to make 4 fluidounces. To the latter add a mixture of the water and 15½ fluidounces of alcohol. With this liquid impregnate paper as in the preceding instance.

This paper will indicate 1 part of potassium hydrate in 15,000, and 1 of ammonia in 40,000.

V. Lead paper:

Lead acetate.....av.oz. 3
 Distilled water.....fl.oz. 30

Dissolve, and prepare the paper as in the preceding.

VI. Litmus paper, blue:

Litmus, best.gr. 780
 Distilled water,
 Phosphoric acid.....of each, sufficient

Macerate the litmus in 32 fluidounces of water for 12 hours; filter, and add through the filter enough water to make the filtrate measure 32 fluidounces. To the latter add phosphoric acid, drop by drop, until the liquid appears blue, with reddish cast. Then impregnate paper as in the preceding instance.

This paper will indicate 1 part of sulphuric acid in 40,000, and 1 of hydrochloric acid in 50,000.

VII. Litmus paper, red:

Litmus, best.....gr. 672
 Distilled water.....fl.oz. 32
 Phosphoric acid.....of each, sufficient

Macerate the litmus with the distilled water for 24 hours; filter, and add enough of the acid to filtrate until the fluid is red; then set aside for 24 hours, decant the clear liquid, and filter. With this liquid impregnate paper as in the preceding instance. The second filtration is necessary to remove a brownish substance which is deposited. Hydrochloric acid may be substituted for the phosphoric acid.

This paper will indicate 1 part of potassium hydrate in 20,000, and 1 of ammonia in 60,000.

VIII. Logwood paper:

Logwood, rasped.....gr. 585
 Distilled water.....fl.oz. 32
 Ammonia water.....sufficient

Macerate the logwood with the water for 24 hours; filter, and to the filtrate add ammonia water, drop by drop, until the liquid assumes a dark blue-red color. With this liquid impregnate paper as in the preceding instance.

When freshly prepared, this paper will indicate 1 part of ammonia in 80,000 to 90,000.

IX. Potassium iodide-starch paper:

Wheat starch.....av.oz. 1
 Potassium iodide.....gr. 70
 Distilled water.....fl.oz. 85½

Mix the starch thoroughly with 1 fluid-ounce of water, gradually add the remainder of the water, in a boiling condition; heat the whole on a water bath for 30 minutes, then add the potassium iodide, and dissolve.

The test paper is prepared by painting the solution upon one surface of letter paper by means of a broad, soft brush and then drying.

X. Starch paper:

Wheat starch.....gr. 150
 Distilled water.....fl.oz. 32

Intimately mix the starch with 3 fluidrams of water, and then add the remainder of the water in a hot condition. With this mixture prepare test paper as in the preceding instance. A caution to be observed is that the brush must not be passed over the same spot twice

as this would loosen some of the fibers of the paper.

This paper will indicate 1 part of free iodine in 25,000.

Tin Plating.

See "Plating with Gold, Silver," etc.

Twaddell's Scale.

The Twaddell is an old degree scale largely used in England, principally among the dyers' to indicate the strength of solutions of mordants, etc. It is an arbitrary standard, something similar to Baume scale. The following rule is used for converting Tw. degrees into specific gravity: Multiply Twaddell's degrees by 5, add 1000 and divide by 1000. For example: To reduce 64 degs. Tw. $(64 \times 5) + 1,000$ divided by 1000 = 1.320 sp. gr. Or another, method is to multiply by 5, cut off 3 decimal places, and add 1: $64 \times 5 = 320$; a decimal point will make 0.320; then add 1 = 1.320.

Varnishes.

These, like lacquers, are resinous solutions intended as protective applications to metals, wood, etc.

Varnish, Amber.

I.
 Amber, coarse powder.....av.oz. 8
 Oil of turpentine.....fl.oz. 18
 Mix and dissolve.—D.

II.
 Amber.....av.oz. 8
 Oil of turpentine.....fl.oz. 9
 Linseed oil varnish.....fl.oz. 6
 Melt the amber out of contact with the air, allow to cool somewhat; add the oil, and then the varnish.—D.

Varnish, Anatomical.

Mastic.....av.oz. 8
 Sandarac.....av.oz. 8
 Camphor.....gr. 110
 Venice turpentine.....av.oz. ¼
 Alcohol.....fl.oz. 28

Mix and dissolve.

This is used for dry anatomical specimens.—H.

Varnish, Black.

Linseed oil varnish.....fl.oz. 10
 Burnt umber.....av.oz. 2
 Asphaltum, powder.....av.oz. 4
 Oil of turpentine.....sufficient

Heat the first three ingredients until the asphaltum is dissolved, then remove from the

fire and add oil of turpentine until the liquid is of proper consistency.—H.

Varnish, Bookbinders.

I.

Shellac	av.oz.	4
Benzoin	av.oz.	1½
Sandarac	av.oz.	1
Mastic	av.oz.	1
Oil of lavender.....	fl.dr.	2
Absolute alcohol.....	fl.oz.	24

Mix, macerate for some time, agitating occasionally; decant the clear liquid, and filter.—H.

II.

Shellac	av.oz.	4
Mastic	av.oz.	1
Benzoin	av.oz.	2
Venice turpentine.....	gr.	150
Alcohol	fl.oz.	20

Macerate a few days, agitating occasionally, and filter.—H.

Varnish, Celluloid.

Pyroxylin (soluble gun cotton)...	gr.	200
Ether	fl.oz.	4½
Alcohol	fl.oz.	6
Camphor	gr.	120

Pour the ether over the pyroxylin, add the alcohol and finally add the camphor.

This varnish may be colored by the addition of anilines. It is particularly adapted for covering paper labels.—D.

Varnish for Chocolate Candy.

Sumatra benzoin	gr.	500
Shellac, pale.....	gr.	500
Vanillin.....	gr.	7
Alcohol, enough to make.....	fl.oz.	16

Dissolve the first three ingredients in 14 fluidounces of alcohol; filter, and pass enough alcohol through the filter to make the filtrate measure 16 fluidounces.—D.

Varnish, Copal.

Copal resin.....	av.oz.	8
Linseed oil.....	fl.oz.	6
Oil of turpentine	fl.oz.	6

Melt the copal; add the linseed oil, and when nearly cool add the oil of turpentine.

Varnish, Dammar.

Dammar resin.....	av.oz.	8
Oil of turpentine	fl.oz.	18

Melt the resin carefully over the direct flame; allow to cool, pulverize, and dissolve in the oil.

This varnish may be prepared by dissolving the resin without the preliminary fusion, but the product will always be sticky.—D.

Varnish, Furniture.

Shellac	av.oz.	7
Resin	gr.	175
Absolute alcohol.....	fl.oz.	20
Turpentine	av.oz.	1
Talc, powder.....	av.oz.	¾

Warm the shellac and resin; add the absolute alcohol, and finally, the turpentine and talc. Shake vigorously for several minutes and stand in a cool place. After 8 days filter through a filter which has been previously wetted with alcohol.—D.

Varnish, Grecian.

Balsam of fir.....	av.oz.	6
Oil of turpentine	fl.oz.	2
Alcohol.....	fl.oz.	4

Varnish, Label.

I.

Sandarac	av.oz.	4½
Mastic	av.oz.	2
Camphor	gr.	35
Oil of lavender.....	fl.dr.	5
Venice turpentine	gr.	150
Ether	fl.dr.	4
Alcohol	fl.oz.	4

Macerate for several weeks, agitating frequently until dissolved, and decant or strain from impurities. The varnish dries rapidly to a colorless, smooth and glossy layer.

II.

Sandarac.....	av.oz.	8
Mastic.....	av.oz.	¾
Venice turpentine.....	gr.	150
Alcohol	fl.oz.	16

Macerate with repeated stirring until solution is effected, and then filter.

Paper labels are first sized with diluted mucilage, then dried, and then coated with this varnish. If the labels have been written with water-soluble inks or color, they are first coated with two coats of collodion, and then varnished.—D.

III.

Shellac, bleached	av.oz.	5½
Balsam of copaiba	av.oz.	½
Venice turpentine	gr.	100
Alcohol.....	fl.oz.	16

Prepare and use like the preceding.—D.

Varnish, Linseed Oil.

I. Evaporate 100 parts of linseed oil over the naked flame stirring constantly until it weighs 90 parts. Allow to cool, and add 5 parts of oil of turpentine.—D.

II. Heat 100 parts of linseed oil with $2\frac{1}{2}$ of litharge over the naked flame until there is no further effervescence. Then set aside for 14 days. The product weighs about 95 parts.—D.

III. Heat 100 parts of linseed oil with 4 parts of manganese borate over the naked flame, with constant stirring until the yellow color of the oil changes to a pale yellowish-green. The change in color may be observed by transferring a drop of the liquid, from time to time, to a porcelain plate. The termination of the reaction is also denoted by the discontinuance of effervescence. The varnish should now be removed from the fire and cooled rapidly, if possible, by setting the dish in cold water; then set aside for 14 days. The product weighs about 98 parts.—D.

Varnish, Map.

Saturated solution of borax.....fl.oz. 12
Shellac, fine powder.....av.oz. 6

Shake together, but apply no heat.

Varnish for Metals.

Shellac, pale.....gr. 500
Sandarac.....gr. 500
Venice turpentine.....gr. 70
Alcohol, enough to make.....fl.oz. 16

Dissolve the shellac, sandarac and turpentine in 14 fluidounces of alcohol by maceration; filter and add enough alcohol to make 16 fluidounces.

This varnish may be applied to all kinds of polished metal.—D

Varnish, Transparent.

Sandarac.....av.oz. 2
Mastic.....gr. 300
Venice turpentine.....gr. 90
Alcohol.....fl.oz. 12

After solution filter, and add sufficient alcohol to bring to the measure of 15 fluidounces.

Varnish Stains, Removal of.

See "Stains from Fabrics, Removal of."

Washing Powder. (Soap Powder.)

Washing powders, usually sold to the consumer as soap powders, may be described in a general way as mixtures of powdered soap, with about its own weight, more or less, of sodium carbonate. Some special brands are also made, which in addition contain other detergent agents, such as ammonium carbonate, sal ammoniac or borax; while still others are found, to which filling, in the form of talc, silex, etc., has been added. The soap itself may have been made by any of the processes known—cold, half-boiled, or boiled, settled, or boiled down—and the stock used may have been any fat, or mixture of fats, according to the grade of washing powder to be made. Here are some typical formulas:

I. Borax Soap Powder:

Curd (hard) soap, powder.....av.oz. 10
Soda ash.....av.oz. 6
Sodium silicate.....av.oz. $\frac{1}{2}$
Borax.....av.oz. 2

Each ingredient is thoroughly dried, and all mixed together by sifting:

II. London Soap Powder:

Yellow soap.....av.oz. 12
Pearl ash.....av.oz. 3
Palm oil.....av.oz. 2

These ingredients are combined as well as possible without any water, and they are spread out to dry, and then ground into coarse powder. They are adapted to hard waters, as their excess of carbonated alkali neutralizes the lime in the water.

III. Pearl Soap Powder:

Curd soap, powder.....av.oz. 8
Sal soda (crude sodium carbonate).....av.oz. 6
Sodium silicate.....av.oz. 4

Dry as much as possible and mix intimately.

Window Polishing Paste.

Prepared chalk.....av.oz. 9
White bole.....av.oz. $\frac{1}{2}$
Jeweler's rouge.....av.oz. $\frac{1}{2}$
Water.....fl.oz. 5
Alcohol.....fl.oz. 3

Make into a smooth paste and introduce into a wide-mouth bottle.

Moisten a cloth with alcohol, place upon the window glass a quantity of the paste of about the size of a bean, and rub the latter about on the glass with the cloth until dry and the powder is removed.—D.

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